

00005 - CERTIFICATIONS PAGE

FIRST FLOOR EXHIBITS INFRASTRUCTURE SUPPORT

OWNER:

STATE PRESERVATION BOARD (SPB)
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OWNER'S ARCHITECT:

STATE PRESERVATION BOARD
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STRUCTURAL ENGINEER

TBD PER EXHIBIT CONTRACTOR

ELECTRICAL ENGINEER:

TBD PER OWNER

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01 10 00 - SUMMARY

PART 1 GENERAL

1.01 PROJECT

1. Project Name: First Floor Core Exhibits Integration and Installation
2. Owner's Name: State Preservation Board
3. Architect's Name: Kevin Koch, AIA, State Preservation Board
4. Exhibit Designer: Ralph Appelbaum Associates
5. Electrical Engineer: TBD by exhibit designer
6. Structural Engineer: TBD by exhibit contractor
7. Life Safety Engineer: TBD by TSHM

1.02 BACKGROUND

1. The Bullock Texas State History Museum is replacing its first floor exhibits with new exhibits featuring La Belle, a 17th century sailing ship recovered from Matagorda Bay in the 1990's. Initial demolition and infrastructure work for this exhibit was completed under a separate project in 2015.
2. The primary milestone for scheduling of work is the opening of the exhibit on November 8, 2018.
3. This Project:
 - a) Removes a few sections of existing partitions, and temporary partitions at the back of the gallery.
 - b) Patches remaining walls and finishes
 - c) Places selected new partitions, finishes, and electrical wiring and accessories;
 - d) Relocates and adds fire alarm devices as required by new construction, if required;
 - e) Installs a new exhibition;
 - f) Coordinates all work within an operating museum environment.
4. Museum staff will demolish special exhibit features and AV equipment before commencement of work in this Project.
5. The work will proceed within the Museum's exhibit atrium as the remainder of the atrium is open to the public. General Conditions and Temporary Facilities will note the requirements to maintain a dust free environment, maintain emergency egress paths, coordinate work schedule around occasional Museum events, and stage the work to avoid conflict with visitor traffic. A clear path is available to the interior workspace, entirely back-of-house, from a work staging area at the exterior of the building.

1.03 SCOPE OF WORK

1. Install scaffolding and sheet plastic over the LaBelle hull, sufficient to withstand impacts from adjacent work including any potential partition or complete collapse of adjacent case AC_08, and to prevent intrusion of any construction dust onto the hull.
2. Demo existing selected:
 - a. Walls and temporary partitions
3. Install interior partitions, electrical and exhibits as defined in the bid package dated 1/2018, containing the following sections:
 - a. Design: exhibit design and architectural design drawings
 - b. Artifacts: spreadsheets and images
 - c. Graphics: panel schedule
 - d. Content: content matrix
 - e. AV: equipment cut-sheets
 - f. Pricing Sheets: exhibit and AV pricing sheets
 - g. General Conditions
4. Relocate and add fire alarm devices as indicated
5. Paint all wall surfaces up to the +/- 18' elevation

1.04 WORK BY OWNER

1. Removal of artifacts
2. Removal of Audio Visual equipment and cabling
3. Removal of selected exhibit casework and props

1.05 SCHEDULE

1. Detailed schedule attached, Section 00 31 00.

1.06 ACCESS

1. Access to the facility will be coordinated through Museum Deputy Director Margaret Koch.
2. Access can be coordinated 7 days a week, 24 hours a day, as required to complete the work, with the exception of special events held in the Museum lobby.
3. An entirely back-of-house path is available from the loading dock to the work space, using the freight elevator.
4. On occasion events may be held in the Museum that require work to be completed earlier on those days or require the shared use of the freight elevator and passage through 1st floor exhibits (which overlays the emergency egress path). Pre-scheduled events with criteria for potential work flow adjustments will be shared monthly, and whenever possible, a minimum of 48 hours notices will be given to the GC by the Museum as to when events affecting work are scheduled.
5. The Museum will remain open for the duration of the work. Visitors will be viewing exhibits on the second and third floors of the Museum.

6. Parking spaces adjacent to the Museum loading dock along Colorado Street between 18th and 19th streets can be bagged for parking and staging of dumpsters or other equipment.
7. Deliveries of equipment and materials can be coordinated on Colorado street, at the loading dock.
8. Storage of valuable equipment may be coordinated inside the loading dock for limited periods of time.

1.07 OWNER SUPPLIED MATERIALS

1. No Owner supplied materials will be available.
2. The Owner does not lend its lifts or ladders for contractor use.

1.08 CONTRACTOR USE OF SITE AND PREMISES

1. The work space is at the bottom of an atrium completely open to two additional floors of exhibits. Every effort must be made to maintain dust-free conditions, including tenting of dust-generating work, and negative air devices to exhaust air to the exterior of the building.
2. Daily clean-up is required to prevent the accumulation and distribution of dust throughout the building. Reasonable efforts must be made to minimize noise.
3. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
4. Contractor Parking will be provided in the Museum Parking Garage, below the Museum. Larger vehicles, vehicles used regularly throughout the day, or used for small deliveries may be parked at a bagged meter on Colorado Street between 17th and 18th.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

01 10 10 – SUBSTITUTION REQUEST FORM

GENERAL: THIS FORM IS PART OF THE SUBSTITUTION REQUIREMENTS SPECIFIED IN SECTION 01 60 00. SUBMITTAL TO BE SENT TO THE ARCHITECT FOR APPROVAL.

SPECIFIED ITEM: _____

SECTION: _____ **PARAGRAPH:** _____

PROPOSED SUBSTITUTE:

ATTACH COMPLETE DESCRIPTION, CATALOG, SPEC DATA, AND LABORATORY TESTS, IF APPLICABLE.

- 1. WHAT EFFECT WILL SUBSTITUTION HAVE ON DIMENSIONS, GAUGES, WEIGHTS, ETC. INDICATED IN CONTRACT DOCUMENTS?**

- 2. WHAT EFFECT WILL SUBSTITUTION HAVE ON WIRING, PIPING, DUCTWORK, ETC. INDICATED IN CONTRACT DOCUMENTS?**

- 3. WHAT EFFECT WILL SUBSTITUTION HAVE ON OTHER TRADES?**

- 4. WHAT EFFECT WILL SUBSTITUTION HAVE ON CONSTRUCTION SCHEDULE?**

- 5. WHAT ARE THE DIFFERENCES IN QUALITY AND PERFORMANCE BETWEEN PROPOSED SUBSTITUTE AND SPECIFIED PRODUCT?**

6. MANUFACTURER'S GUARANTEES OF THE SPECIFIED PRODUCTS AND PROPOSED PRODUCTS

ARE:

SAME: _____ DIFFERENT: (EXPLAIN) _____

7. LIST (ON SEPARATE SHEET) THE AVAILABILITY OF MAINTENANCE SERVICES AND REPLACEMENT MATERIALS FOR PROPOSED SUBSTITUTES.

8. IF THE SUBSTITUTION IS ACCEPTED, IT WILL RESULT IN:

NO COST IMPACT _____ CREDIT (HOW MUCH) _____

ADDED COST (HOW MUCH) _____

9. THERE ARE ____ ARE NO ____ LICENSE FEES AND ROYALTIES PENDING ON THE PROPOSED SUBSTITUTE.

EXPLAIN: _____

SUBMITTED BY: (CONTRACTOR)

FIRM: _____

ADDRESS: _____

SIGNATURE: _____

TELEPHONE NO. _____ DATE _____

END OF SECTION

PAYMENT BOND

STATE OF TEXAS

COUNTY OF _____

LET IT BE KNOWN BY THIS INSTRUMENT:

That we, _____ as principal

and we _____ a corporation

duly authorized to do business in this State, as Surety(s), are this date held and firmly
bound unto the State of Texas in the amount of _____

_____ Dollars \$ _____

for payment of which indemnity the said Principal and Surety, by this declaration, do firmly bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and individually.

Since a Contract, which by reference is made a part hereof, exists between Principal and the State of Texas,
acting by and through the State Preservation Board, and dated _____

_____ for the _____

The conditions of this obligation are, therefore, such that it shall remain in full force and effect unless and until
the Principal shall faithfully perform the Contract in accordance with the Contract Documents.

The liabilities, rights, limitations, and remedies concerning this Bond shall be determined in accordance with
the
provisions of Chapter 2253 of the Texas Government Code, amended by Acts of 73rd Legislature, 1993
pursuant to which Bond is executed.

IN WITNESS TO THIS DECLARATION, the said Principal and Surety(s) have signed and sealed this
instrument

this _____ day of _____

PRINCIPAL

SURETY

By _____ By _____

Bond Identification No. _____

Address of Attorney-In-Fact

Telephone No. of Attorney-In-Fact

PERFORMANCE BOND

STATE OF TEXAS

COUNTY OF _____

LET IT BE KNOWN BY THIS INSTRUMENT:

That we, _____ as principal

and we _____ a corporation

duly authorized to do business in this State, as Surety(s), are this date held and firmly
bound unto the State of Texas in the amount of _____

_____ Dollars \$ _____

for payment of which indemnity the said Principal and Surety, by this declaration, do firmly bind themselves,
their

heirs, executors, administrators, successors and assigns, jointly and individually.

Since a Contract, which by reference is made a part hereof, exists between Principal and the State of Texas,
acting by and through the State Preservation Board, and dated _____

_____ for the _____

The conditions of this obligation are, therefore, such that it shall remain in full force and effect unless and until
the Principal shall faithfully perform the Contract in accordance with the Contract Documents.

In the event of Principal's failure, as defined by the Contract Documents, to faithfully perform the Contract,
Surety(s) will within fifteen (15) days of determination of default, assume full responsibility for completion
of said Contract and become entitled to payment of the balance of the Contract amount.

The liabilities, rights, limitations, and remedies concerning this Bond shall be determined in accordance with
the provisions of Chapter 2253 of the Texas Government Code, amended by Acts of 73rd Legislature, 1993
pursuant to which Bond is executed.

IN WITNESS TO THIS DECLARATION, the said Principal and Surety(s) have signed and sealed this
instrument

this _____ day of _____

PRINCIPAL

SURETY

By _____ By _____

Bond Identification No. _____

Address of Attorney-In-Fact

Telephone No. of Attorney-In-Fact

00 70 00 – GENERAL CONDITIONS

The State of Texas Uniform General Conditions are available online here:

http://www.tfc.state.tx.us/divisions/facilities/prog/construct/formsindex/2015_UGC_09-16-15.pdf

00 71 00 – SUPPLEMENTARY CONDITIONS

The State of Texas Uniform General Conditions are available online here:

<http://www.tfc.state.tx.us/divisions/facilities/prog/construct/formsindex/06D-SupplementaryGenConditionsFeb2012.pdf>

00 72 00 – SPECIAL GENERAL CONDITIONS to the State of Texas 2010 Edition of the Uniform General Conditions for Construction Contracts

22.2 Page 6, Article 2, Item 2.2.1.2 add new Subparagraph 2.2.1.2.1:
2.2.1.2.1: Owner's Prevailing Wage Schedule will be defined by the Davis-Bacon
Wage Determinations dated March 7, 2014.

00 73 00 – OWNER’S REQUIREMENTS

The First Floor Exhibits Integration and Fabrication project has some unique conditions that the Contractor must be prepared to address within their proposal and that must be covered by their fee:

1. At all times while working on state property, Contractors must satisfy all safety requirements of OSHA and all other federal, state and local safety regulations. Contractors must provide a safe working environment within the designated work area. Contractors must inhibit visitors and unauthorized personnel from entering the work area or crossing the pathway of vehicles entering or exiting the work area.
2. Security within the Museum must be maintained. Contractors should be prepared to provide TSHM with a list of all employees working on the project. All contractors must sign in and out at the Security Booth daily, and adhere to the Museum’s rules and regulations.
3. In order to maintain pleasant surroundings for Museum patrons, Contractor and construction personnel shall observe the Museum’s rules and regulations including the following:
 - a. No smoking shall be permitted in the interior of the building.
 - b. No food or drink is allowed in the Museum’s exhibit halls or any area that contains original artifacts, or as specified.
 - d. Contract employees must not use profanity nor wear clothing that contains inappropriate language or images while working
 - e. Contractors must be courteous to Museum occupants and visitors whenever there is interaction.
 - f. To assure audibility of fire alarms at all times and reduce noise in the operating Museum space, prohibit interior use of music players and individually controlled audio systems by construction personnel.
4. Contractor access to the space will be from the back of the Museum along Colorado Street. Spaces can be bagged off and reserved per contractor use, as requested. Entry for all workers, materials and equipment will be through the loading dock, down the freight elevator, through a back hallway, with access to the work space via a large rolling door.
5. All vehicular access for deliveries to the Museum must be coordinated 72 hours in advance for access to the loading dock.
6. No heavy equipment can be transported through the public areas of the Museum during opening hours; any special access for equipment must be requested and approved in advance to coordinate maximum loads of the freight elevator and floors. All dollies, job boxes, hand trucks, carts, buggies, pallet jacks and other wheeled equipment must have soft rubber wheels or inflatable rubber wheels. No steel or other metal wheels are permitted on the premises without prior approval by TSHM. Contractors are financially responsible, on a per-occurrence basis, for repair of any damage to surfaces caused by Contractor’s vehicles or equipment. TSHM will determine if a particular repair may be addressed by the Contractor or if the Contractor must pay TSHM to address the repair.
7. A clear path for public emergency egress must be maintained at all times.

8. Care must be taken to minimize noise as much as possible, although no special sound reducing measures will be required other than being mindful of the impact of work activities.
9. Dust control inside the Museum is very important. Every effort must be made to contain dust within the work area, and maintain a clean working environment.
10. Temperature and humidity conditions inside the Museum must be maintained from preparation through completion of this project. The TSHM will be managing Indoor Air Quality and Ventilation through control of the existing HVAC system; coordinate with the Owner as work progresses to maximize benefit of ventilation control.
11. Any scaffolding deemed necessary is the responsibility of the Contractor.
12. Hot Work Permits issued by the Fire Marshal are required for all interior work involving open flames or producing heat and/or sparks. Hot Work Permits are required for exterior work involving open flames or producing heat and/or sparks occurring within 50 feet of any structure. Contractors must provide requests for Hot Work Permits a minimum of 24 hours prior to the commencement of the work, and obtain the permit prior to performing the work.
13. Contractors are responsible for supplying their own dumpsters for debris and trash removal. Contractors are prohibited from using TSHM dumpsters without prior approval. Contractors must remove all construction debris and trash from the construction area daily using covered carts, to minimize dust and in accordance with state and federal laws. All clean-up of tools and equipment, if required, must be done off site and not on the grounds or in the building. Contractors must not dispose of any hazardous chemicals or any type of solids using the state's sanitary or storm sewer system. No trash or flammable material storage of any type whatsoever shall be permitted inside the Museum. Oily rags should not be collected or left on the job site, to avoid combustion.
14. Work hours can be arranged 24 hours a day, 7 days a week, to allow every opportunity to complete this work within the schedule allotted. 72 hours' notice is required for approval. No work is to be done without an approved TSHM staff member on site.
15. TSHM may stop the work temporarily at any time for any reason. Forced delays occur rarely when the Contractor's work is impacting Museum operations in a negative way.
16. Parking: limited amount of parking may be made available for contractor's use; the location of parking spaces to be determined based on the requirements of the work.

END OF SECTION

**00 74 00 –STATE PRESERVATION BOARD
FIRE PROTECTION POLICY**

1. Purpose: To provide safety guidelines for state personnel and outside contractors who will be performing work involving open flames, sparks, generation of high temperature, or highly combustible materials within or near the buildings. To provide guidelines for any activity producing fine dust or particles that may trigger the fire alarm system.
2. Guidelines. In instances in which construction or repairs involve open flames, sparks, or the use of highly combustible materials, a fire watch will be established. The most current fire safety procedures and standards will be applied. Personnel and contractor must meet the requirements established in NFPA 51-B as a minimum, but other currently accepted fire safety procedures shall also apply. Basic procedure shall include but are not limited to the following.
 - A. The area shall be cleared of all removable combustible materials.
 - B. The floor shall be swept clean within a minimum of 10 feet of the work area.
 - C. The wall and floor opening in the area will be appropriately sealed to prevent spread to adjacent areas.
 - D. The ducts to the areas will be sealed or shut down.
 - E. Fire watchers shall have adequate fire extinguishing equipment readily available and shall be trained in their use.
 - F. Fire watchers shall be trained in the use of the building alarm systems. They shall be familiar with the facilities and with the fire evacuation plan.
 - G. The fire watch shall be maintained after the completion of the work for a period of time adequate to assure that no risk remains.
 - H. The work site shall be inspected by the fire watcher(s) at two-hour and four-hour intervals following the completion of work.
3. Permits and supervision.
 - A. Projects and contracts of less than \$100,000. The Capitol fire marshal shall issue a permit for any activity involving a potential fire hazard and shall implement appropriate fire watch procedures. A permit signed by the fire marshal shall serve as authorization to proceed. The fire marshal shall designate trained fire watchers to oversee the activity.
 - B. Contracts of \$100,000 or more. The contractor shall submit a proposed fire protection program for the review and approval of the Capitol fire marshal. The program shall include fire watch procedures as well as routine fire prevention procedures in compliance with this policy and commonly accepted fire prevention standards. Upon approval of the fire protection program by the Capitol fire marshal, the contractor shall assume the responsibility for the implementation and oversight of the program with periodic review by the fire marshal. The contractor shall issue fire watch permits and assume responsibility for enforcing this policy.

4. Coordinate with Fire Marshal to cover smoke detectors adjacent to any activity which may trigger false alerts, either from dust or from particles from incipient fires that may result from hot work. Such covers will be placed each morning and removed at the end of each work day.

01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. Document 00700 - General Conditions and Document 00800 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- B. Section 01270 - Unit Prices: Monetary values of unit prices, payment and modification procedures relating to unit prices.

1.03 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Owner for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit a printed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet, or similar format acceptable to the Owner.
- D. Submit Schedule of Values within 14 days after date after execution of Agreement for Work.
- E. Utilize numbering and scope of CSI divisions contained in these specifications.
- F. Revise schedule to include approved Change Orders with each Application for Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Monthly.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect and Owner for approval.
- C. Forms filled out by hand will not be accepted.
- D. Present required information in typewritten form.
- E. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including G703 continuation, or similar format acceptable to the Owner.
- F. Execute certification by signature of authorized officer.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- H. Submit Draft copies of each Application to Owner and Architect seven (7) days prior to date of Application for review and comments.
- I. After making requested revisions, submit four copies of each Application for Payment to Owner for approval and payment.

1.05 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Price or Contract Time, Architect/Owner will issue instructions directly to Contractor.
- C. The Architect/Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing Architect's Supplemental Instructions on AIA Form G710, or similar format.
- D. Construction Change Directive: Owner may issue a document instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change in Work.
- E. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 working days.
- F. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01600.
- G. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
 - 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- H. Substantiation of Costs: Provide full information required for evaluation.
 - 1. On request, provide following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 - 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.

- d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- I. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- J. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- K. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- L. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01700.

END OF SECTION

01 30 00 – ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting
- B. Progress meetings
- C. Construction Progress Schedule
- D. Submittals for review, information, and project closeout
- E. Number of copies of submittals
- F. Submittal procedures.

1.02 RELATED SECTIONS

- A. Document 00700 – General Conditions. Date for applications for payment
- B. Section 01565 – Security Measures
- C. Section 01700 – Execution Requirements: Additional coordination requirements
- D. Section 01780 – Closeout Submittals: Project record documents.

1.03 PROJECT COORDINATION

- A. Project Coordinator: The State Preservation Board, Owner/Architect
- B. Project Exhibit Designer: Ralph Appelbaum Associates
- C. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for access, traffic, and parking facilities.
- D. During construction, coordinate use of site and facilities through the Project Coordinator.
- E. Comply with Project Coordinator's procedures for intra-project communications, submittals, reports, records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- F. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- G. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- H. Make the following types of submittals to Owner/Architect/Exhibit Designer:
 - 1. Requests for interpretation
 - 2. Requests for substitution
 - 3. Shop drawings, product data, and samples
 - 4. Test and inspection reports
 - 5. Design data
 - 6. Manufacturer's instructions and field reports.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Attendance Required:
 - 1. Owner/Architect
 - 2. Exhibit Designer
 - 3. Contractor
- B. Agenda:
 - 1. Execution of Owner-Contractor Agreement
 - 2. Submission of executed bonds and insurance certificates
 - 3. Distribution of Contract Documents
 - 4. Submission of schedule of values, and progress schedule
 - 5. Designation of personnel representing the parties to Contract, and Architect
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
 - 7. Scheduling
 - 8. Security Procedures.
- C. Designation of personnel representing the parties to Contract.

3.02 PROGRESS MEETINGS

- A. Given the short duration and small scope of this Project, progress meetings will be called informally as required, between the Owner and Prime Contractor.

3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. If preliminary schedule requires revision after review, submit revised schedule within 5 days.
- B. Within 5 days after award of contract, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- C. Given the short duration of this Project, an updated schedule is not required with each Application for Payment.

3.04 PROGRESS PHOTOGRAPHS

- A. Owner/Architect will photo document work.

3.05 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data
 - 2. Shop drawings
 - 3. Samples for selection
 - 4. Samples for verification

- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 – CLOSEOUT SUBMITTALS

3.06 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data
 - 2. Certificates
 - 3. Test reports
 - 4. Inspection reports
 - 5. Manufacturer's instructions
 - 6. Manufacturer's field reports
 - 7. Other types indicated
- B. Submit for Architect's knowledge as contract administrator or for Owner. No actions will be taken.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified to individual sections, submit them at project closeout:
 - 1. Project record documents
 - 2. Operation and maintenance data
 - 3. Warranties
 - 4. Bonds
 - 5. Other types as indicated

3.08 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Small Size Sheets, not larger than 8 ½ x 11 inches: submit the number of copies which the Contractor requires, plus two copies which will be retained by the Owner/Architect.
 - 2. Larger sheets, not larger than 30x42 inches: Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Owner/Architect.
 - 3. Digital pdf's of each sheet shall additionally be submitted to the Owner/Architect.
- B. Documents for Information: Submit two.
- C. Documents for Project Closeout: Submit one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. Samples: Submit the number specified in individual specification sections.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

- A. Transmit each submittal with AIA Form G810 or comparable format.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or Supplier, pertinent drawing and detail number, description of item being submitted by item and location within Work, and specification section number, as appropriate on each copy.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- E. Deliver submittals to Architect at business address.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 5 days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and Products or system limitations which may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with the requirements.
- L. Submittals not requested will not be recognized or processed.

END OF SECTION

01 32 50 – CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction progress schedule and reports

1.02 RELATED SECTIONS

- A. Section 01 10 00 – Summary
- B. Section 00 31 00 – Preliminary Work Schedule
- C. Section 01 71 00 – Project Closeout: Project record documents.

1.03 SUBMITTALS

- A. Within 15 days after the award of the Contract, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
 - 2. Submission of complete draft schedule is a precondition for consideration of the initial Application and Certification for Payment.
- B. If proposed schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment
 - 1. Notify the Owner in writing when more than two weeks behind in schedule. Make this notification at weekly increments as long as the condition exists.
- D. Submit schedule in digital format.

1.04 QUALITY ASSURANCE

- A. Contractor's Administrative Personnel: Two years minimum experience in using and monitoring CPM schedules on comparable projects.

1.04 SCHEDULE FORMAT

- A. Submit progress schedule in Gantt chart format.
- B. Listings: In chronological order according to start date for each activity. Identify each activity with the applicable specification section number.
- C. Sheet Size: Maximum 11x17 inches.
- D. Scale and Spacing: To allow for notations and revisions.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of logically grouped activities.
- D. Indicate dates when applications for progress payments will be made
- E. Show accumulated percentage of completion of each item, and total percentage of Work complete as of the first day of each month.
- F. Provide separate submittal progress schedule, showing submittal dates for each mock-up, shop drawing, product data, sample, owner-furnished products, and dates reviewed submittals will be returned from Architect/Owner. Indicate critical decision dates on the Critical Path for selection of finishes, allowances, and products to be furnished by Owner (if any).
- G. Indicate delivery dates for owner-furnished products and products.
- H. Coordinate content with schedule of values specified in Section 01 20 00.
- I. Provide legend for symbols and abbreviations used.

3.03 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.04 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Owner/Architect and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedule.

END OF SECTION

01 33 00 – SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.02 RELATED SECTIONS

- A. 01 20 00 Price and Payment Procedures
- B. 01 40 00 Quality Requirements
- C. 01 71 00 Contract Closeout

1.03 SUBMITTAL TYPES

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.04 SUBMITTAL PROCEDURES

- A. Electronic copies of CAD Drawings of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals upon Architect's receipt of a signed CAD release form from Contractor.
- B. Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - i. Architect reserves the rights to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 3. Provide all submittals that require color, pattern or texture selection at the same time to allow Architect to make selections in a coordinated manner.
- C. Comply with submittal schedule requirements in Section 01 32 50 Construction Progress Schedule for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence upon Architect's receipt of submittal.
 - 1. Allow 7 calendar days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals.

Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. Where concurrent review of submittals by Architect's consultants or other parties is required, allow 14 calendar days for initial review of each submittal.
 3. Where the Contract Documents indicate that submittals may be transmitted directly to Architect's consultants, provide duplicate copy of transmittal to Architect. Submittal will be returned to Architect before being returned to Contractor.
 4. Allow 7 calendar days for processing each resubmittal.
 5. Upon written request of the Contractor and written agreement by the Architect, submittals and resubmittals may be expedited as required by the conditions of the Project.
 6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - i. Project Name
 - ii. Date
 - iii. Name and address of Architect
 - iv. Name and address of Contractor
 - v. Name and address of subcontractor
 - vi. Name and address of supplier
 - vii. Name of manufacturer
 - viii. Unique identifier, including revision number
 - ix. Number and title of appropriate specification section
 - x. Drawing number and detail references, as appropriate
 - xi. Other necessary identification.
 4. Deviations: Highlight, circle, or otherwise identify deviations from the Contract Documents on submittals.
 5. Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
 - i. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 - ii. Include Contractor's certifications stating that information submitted complies with requirements of the Contract Documents.

- iii. Use the Contractor's standard submittal form. Provide locations on form for the following information:
 - 1. Project Name
 - 2. Date
 - 3. Destination (TO)
 - 4. Source (FROM)
 - 5. Names of subcontractor, manufacturer, and supplier
 - 6. Category and type of submittal
 - 7. Submittal purpose and description
 - 8. Submittal and transmittal distribution record
 - 9. Remarks
 - 10. Signature of transmitter
- iv. Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- v. Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 PRODUCTS

2.01 ACTION SUBMITTALS

- A. Prepare and submit Action Submittals required by individual specification sections.
 - 1. Submit number of copies Contractor wants returned plus one copy of each submittal, unless otherwise indicated. Mark up and retain one returned copy as a Project Record Document.
- B. Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specifically prepared for submittal because standard printed data are not suitable for use, submit as shop drawings, not as product data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - i. Manufacturer's written recommendations
 - ii. Manufacturer's product specifications
 - iii. Manufacturer's installation instructions
 - iv. Standard color charts
 - v. Manufacturer's catalog cuts
 - vi. Wiring diagrams showing factory-installed wiring.
 - vii. Printed performance curves
 - viii. Operational range diagrams
 - ix. Mill reports

- x. Standard product operating and maintenance manuals
 - xi. Compliance with recognized trade association standards
 - xii. Compliance with recognized testing agency standards
 - xiii. Application of testing agency labels and seals
 - xiv. Notation of coordination requirements
4. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
- i. Preparation: Include the following information, as applicable:
 - 1. Dimensions
 - 2. Identification of products
 - 3. Fabrication and installation drawings
 - 4. Roughing-in and setting diagrams
 - 5. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - 6. Shop work manufacturing instructions
 - 7. Templates and patterns
 - 8. Schedules
 - 9. Design calculations
 - 10. Compliance with specified standards
 - 11. Notation of coordination requirements
 - 12. Notation of dimensions established by field measurement
 - ii. Wiring diagrams: Differentiate between manufacturer-installed and field-installed wiring
5. Samples: Prepare physical units of materials or products, including the following:
- i. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.
 - ii. Samples of Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - iii. Samples for Verification: Submit full-size units or samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: Partial sections of manufactured or fabricated components, small cuts or containers of materials, complete units of repetitively used materials, swatches showing color, texture, and pattern, color range sets; and components used for independent testing and inspection.
 - iv. Preparation: Mount, display, or package samples in manner specified to facilitate review of qualities indicated. Prepare samples to match Architect's

sample where so indicated. Attach label on unexposed side that includes the following:

1. Generic description of Sample
 2. Product name or name of manufacturer
 3. Sample source
- v. Additional Information: ON an attached separate sheet, prepared on Contractor's letterhead, provide the following:
1. Size limitations
 2. Compliance with recognized standards
 3. Availability
 4. Delivery time
- vi. Submit samples of review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
1. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a sample, submit at least three sets of paired units that show approximate limits of the variations.
 2. Refer to individual specification sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
- vii. Number of samples for initial selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- viii. Number of samples for verification: Submit four sets of samples. Architect will retain two sample sets; remainder will be returned. Mark up and retain one returned sample as a project record sample.
- ix. Submit a single sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
6. Maintain sets of approved samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- i. Samples that may be incorporated into the Work are indicated on individual Specification sections. Such samples must be in an undamaged condition at time of use.
 - ii. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of the Contractor.

7. Product schedule or list: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - i. Type of product. Include unique identifier for each product.
 - ii. Number and name of room or space
 - iii. Location within room or space.

PART 3 EXECUTION

3.01 CONTENT

- C. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- D. Identify each item by specification section number.
- E. Identify work of logically grouped activities.
- F. Indicate dates when applications for progress payments will be made
- G. Show accumulated percentage of completion of each item, and total percentage of Work complete as of the first day of each month.
- H. Provide separate submittal progress schedule showing submittal dates for each mock-up, shop drawing, product data, sample, and owner-furnished products. Show dates reviewed submittals will be returned from Architect/Owner. Indicate critical decision dates on the Critical Path for selection of finishes, allowances, and products to be furnished by Owner (if any).
- I. Indicate delivery dates for owner-furnished products and products.
- J. Coordinate content with schedule of values specified in Section 01 20 00.
- K. Provide legend for symbols and abbreviations used.

3.03 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.04 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Owner/Architect and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedule.

2.02 INFORMATIONAL SUBMITTALS

- A. Prepare and submit information submittals required by other specification sections.
- B. Construction Progress Schedule – comply with requirements of section 01 32 50 –
CONSTRUCTION PROGRESS SCHEDULE
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorize for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of test performed before installation of product, for compliance with performance requirements.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- N. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation

- b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers'
 - e. Description of product.
 - f. Test procedures and
 - g. Limitations of use.
- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and Maintenance Data."
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - a. Preparation of substrates.
 - b. Required substrate tolerances.
 - c. Sequence of installation or erection
 - d. Required installation tolerances
 - e. Required adjustments.
 - f. Recommendations for cleaning and protection.
- R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - a. Name, address and telephone number of factory-authorized service representative making report.
 - b. Statement on condition of substrates and their acceptability for installation of product.
 - c. Statement that products at Project site comply with requirements
 - d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - e. Results of operational and other tests and a statement of whether observed performance complies with requirements
 - f. Statement whether conditions, products, and installation will affect warranty
 - g. Other required items indicated on individual specification sections.
- S. Insurance certificates and bonds: prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- T. Material Safety Data Sheets: Submit information directly to Owner.

PART 3 – EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval stamp – stamp each submittal with a uniform approval stamp. Include project name and location, submittal number, specification section title and number, name of reviewer, date of Contractor approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

- A. Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows;
 - a. No Exceptions: Submittal is acceptable without modifications
 - b. Exceptions As Noted: Submittal is acceptable provided modifications noted are made. No resubmittal is required.
 - c. Revise and resubmit – Correct submittal as noted and resubmit for review.
 - d. Submit Specified Item: Submittal is rejected. Submit product specified or other product listed in Part 2.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.
- E. This review is only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for confirming dimensions and correlating at the job site; Information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; Coordination of the Work of all trades; and for performing all work in a safe and satisfactory manner.

END OF SECTION

SPB Project 809-18-0031
1/25/18

Bullock Texas State History Museum
First Floor Core Exhibits Integration and Installation

01 35 10 – ENVIRONMENTAL SAFETY AND WORKER PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Contractor's requirements for maintaining safe working conditions.

1.02 RELATED SECTIONS

- A. General Conditions: Inspections and approvals required by public authorities.

1.03 REFERENCES

- A. 29 CFR 1910, "Occupational Safety and Health Standards."

1.04 SUBMITTALS

NOT USED

PART 2 PRODUCTS

2.01 MATERIALS

- A. The Contractor is to supply materials and equipment to insure the safety and protection of workers, building occupants, and the environment in accordance with regulatory requirements, and these specifications.

PART 3 EXECUTION

3.01 BACKGROUND

- A. The Bullock Texas State History Museum was designed starting in 1998 and completed in 2001. No lead paint or asbestos was used in the construction of the building.

3.02 WORKER PROTECTION

- A. The Contractor is required to follow all regulatory requirements for worker protection.

END OF SECTION

01 40 00 – QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. References and standards
- B. Quality assurance submittals
- C. Mock-ups
- D. Control of installation
- E. Tolerances
- F. Testing and inspection services
- G. Manufacturer's field services

1.02 RELATED SECTIONS

- A. General Conditions: Inspections and approvals required by public authorities.
- B. Section 01700 – Execution Requirements: Testing and adjustment procedures required with Owner's Representative present.

1.03 REFERENCES

- A. ASTM E 329-13C – Standard Specifications for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; 2013.

1.04 SUBMITTALS

- A. Testing Agency Qualifications:
 - 1. Prior to the start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection audit made by Materials Reference Laboratory of National Bureau of Standards, or a national agency of AASHTO, CCRL, NICET, ACI, or AALA that routinely monitors, assesses, and certifies the professional and technical activities of construction testing firms, during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued
 - b. Project title and number
 - c. Name of inspector
 - d. Date and time of sampling or inspection

- e. Identification of product and specifications section
 - f. Location in the Project
 - g. Type of test/inspection
 - h. Date of test/inspection
 - i. Results of test/inspection
 - j. Conformance with Contract Documents
 - k. When requested by Architect, provide interpretation of results.
- 2. Test reports are submitted for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for Owner information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - 1. Submit report in duplicate within 30 days of observation to Architect for information.
 - 2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.05 STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

- E. Neither the contractual relationships, duties, or responsibilities of the parties in contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AND INSPECTION AGENCIES

- A. As indicated in individual specification sections, owner or Contractor shall employ and pay for services of an independent testing agency to perform specified testing. If not indicated, Owner will pay for the testing.
- B. Employment of agency in no way relieves contractor of obligation to perform Work in accordance with requirements of the Contract Documents.
- C. Contractor employed agency:
 - a. Testing agency: Comply with requirements of ASTM E 329, ASTM D 3740, ASTM C 1077, and ASTM 1093.
 - b. Inspection agency: Comply with requirements of ASTM D 290 and ASTM D 3740.
 - c. Laboratory: Authorized to operate in Texas
 - d. Staff: Maintain a full time registered engineer on staff to review services.
 - i. Technical personnel shall provide services and tests under the direct supervision of a registered professional engineer, shall have demonstrated competence in performing the relevant monitoring and test, and shall possess a current certification from the applicable certification entity.
 - e. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PREPARATION

- A. Convene a coordination meeting at the site of Architect's office prior to commencing work.
- B. Require attendance of parties directly affecting, or affected by, work of this section including testing entities and persons interested in performing special inspections.
- C. Obtain list of entities who have expressed interest in performing the Work of this section from the Owner's representative.
- D. Prepare agenda and preside at meeting:
 - a. Review qualifications of the various entities
 - b. Review coordination with related work including Contractors' detailed cpm schedule for performing work requiring special inspections and testing.
- E. Record minutes and distribute copies within two days after meeting with participants, with two copies to Architect/Owner, participants, and those affected by decisions made.

3.01 CONTROL OF INSTALLATION

- F. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- G. Comply with manufacturer's instructions, including each step in sequence.
- H. Should manufacturer's instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- I. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicated higher standards or more precise workmanship.
- J. Have Work performed by persons qualified to produce required and specified quality.
- K. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- L. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturer's tolerances. Should manufacturer's tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions, position before security products in place.

3.04 TESTING AND INSPECTION

- A. See individual specifications sections for testing required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.

3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
 5. Perform additional tests and inspections required by Architect.
 6. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected
 - c. To facilitate tests/inspections
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.

3.05 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary telecommunications services
- B. Temporary conveying systems and access systems (scaffolding) for access to façade, roof, ceilings, and high walls
- C. Temporary protection
- D. Temporary supplemental ventilation
- E. Temporary sanitary facilities
- F. Temporary barriers and fencing
- G. Building Access
- H. Vehicular Access and Parking
- I. Waste removal facilities and services

1.02 RELATED SECTIONS

- A. Section 01510 – Temporary Utilities
- B. Section 01525 – Field Offices.
- C. Section 01566 – Security Measures

1.03 REFERENCE STANDARDS

- A. International Conference of Building Officials, 1997 Uniform Building Code, Vol. 1, Chapter 33, "Site Work, Demolition, and Construction."

1.04 SUBMITTALS

- A. See Section 01 30 00 – Administrative Requirements, and 01 33 00 – Submittal Requirements for submittal procedures.
- B. Product Data: For standard manufactured products, submit product data describing characteristics.
- C. Staging Plan: Before beginning construction, submit a detailed plan for personnel parking and building access, and for receipt of materials and equipment, and delivery to work location inside building.
- D. Emergency Egress Plan: Before beginning construction, submit a detailed plan for ensuring that emergency egress paths for Museum visitors is kept clear throughout construction.
- E. Dust Control Plan: Before beginning construction, submit an overall system description for containing and removing dust for any dust-creating activities. Activities of particular interest are:
 - 1. Cutting of drywall for finish activity
- F. Access System Description: Before beginning construction, submit an overall system description including the following:

1. List of applicable laws, regulations, and ordinances.
2. List of voluntary standards with which the design will comply
3. Description of major items of equipment.
4. Reactions at support points.
5. Weights of major assemblies including platforms.
6. Methods of protection of exterior hardscape at access area west of the Museum, as required for means of delivery.

Note that the system over the ship must withstand any potential impacts from adjacent construction, including potential partial or complete collapse of case AC_08, and must prevent any construction dust from entering the ship hull.

- G. Shop Drawings: Submit shop drawings showing layout, profiles and components, including anchorage, accessories, and hardscape protection for any delivery needs outside the building.
 1. For powered platform systems and stationary scaffolding, show equipment working positions, general arrangement of stage platform, carriage and trolleys, inserts and buttons.
 2. Indicate loads and locations where imposed on the building structure.
 3. Indicate protection methods for exterior hardscapes.
 4. Indicate protection methods, if required, for points of contact with the building.
 5. Structural calculations prepared and certified by a Licensed Professional Engineer demonstrating compliance with referenced Code, design assumptions and method of design.

1.08 QUALITY CONTROLS

- A. Design Engineer's Qualifications: Professional Engineer registered in the State of Texas. Design Engineer shall perform the design, supervise the design, or certify the design, if performed by others.
- B. Installer Qualifications: Manufacturer or other installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project; when requested, submit certificate indicating qualifications.
- C. Pre-Installation Meeting: Before starting installation, conduct a meeting to review project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."

1. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thicknesses indicated.
 2. For safety barriers, sidewalk bridges and similar uses, provide minimum 5/8" thick exterior plywood.
 3. For wood scaffold plank and walkways, minimum lumber dimension shall be 1-1/2" thickness.
- C. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

2.02 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Protect the landscape, hardscape, and structure as required for delivery and installation.
- C. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY BUILDING PROTECTION

- A. The Bullock Museum will remain open to the public throughout the duration of the Project. The Project's work area shares a common atrium with the remainder of the Museum's exhibits, making dust control paramount, and noise control important.
- B. The existing construction on the first floor will be fully patched and painted; adjacent construction to remain intact must be protected.
- C. The entire first floor area will be emptied of casework and artifacts. During Phase 2, artifacts will be on display in the front half of the exhibit hall. Vibration should be kept at a minimum to reduce risk of damage to artifacts.
- D. Although pathways from the loading dock to the work space are all back-of-house areas of minimal finish quality, existing construction along pathways inside the building must also be protected.
- E. Protection of Existing Building Elements: With securely anchored and maintained boarding, case and protect sills, jambs, and soffits of existing finished openings used as passageways or through which materials are handled and exposed corners, spandrels, projecting features, and other existing and new work subject to damage.

- F. Protection of exterior hardscape as required for access: Protect all curbs, flatwork, landscape, sod, and any other exterior elements impacted by access needs for delivery of equipment at the loading dock on the west side of the Museum.
- G. Protect Existing Finished Surface: Place tight fire retardant wood planking under materials stored over permanently exposed masonry or other finished surfaces, and before moving materials over existing or newly finished surfaces. Use wheelbarrows with rubber tires.

3.03 ACCESS

- A. Large equipment and components cannot be brought through the Museum's public areas. The pathway provided from the loading dock to the work space should be of sufficient clearance area to accommodate any equipment or materials. This includes a large freight elevator which was sized to carry a Cadillac.
- B. The loading dock will need to be shared with other operational needs of the Museum. Remove vehicles from loading dock as soon as deliveries are completed.
- C. Give priority to construction vehicles which are used as secure storage for construction material and equipment while on site.
- D. Vehicular access and parking:
 - 1. Coordinate access and haul routes with governing authorities and Owner.
 - 2. Meters may be bagged along Colorado for larger vehicles and trailers; personnel parking may be provided in the Museum's underground parking garage. Parking may be limited and carpooling from remote sites may be required, depending on the number of spaces required.
 - 3. Protect all areas used by heavy equipment and not designed for vehicular traffic.
- E. Provide unimpeded access for emergency vehicles and personnel. Maintain turning space between and around combustible materials.
- F. Maintain a clear path at all emergency egress areas, designated in plan. Any work requiring temporary blocking of emergency egress areas can be completed outside of Museum opening hours.
- G. Gain approval for access for any heavy equipment inside building.
- H. Provide and maintain access to fire hydrants, fire extinguishers, and control valves free of obstruction.

3.04 TEMPORARY CONVEYING SYSTEMS AND SCAFFOLDS:

- A. Provide access systems as noted in drawings and specifications, and as otherwise needed to complete work.
- B. General: Provide temporary hoists, cranes, material elevators, chutes, derricks, scaffolds, staging, stairs, ramps, runways, ladders, platforms, railings, and similar items for proper execution of the work. Such apparatus, equipment, construction, and use shall meet applicable requirements of labor law, federal safety regulations, and other applicable laws, codes, and regulations of authorities having jurisdiction.

- C. Duration of use: Maintain hoisting facilities until structure is in place and most materials have been delivered to location where they will be installed.
 - 1. Location: Subject to acceptance by Owner.
 - 2. Do not free-drop materials, rubbish, or debris.
- D. Protection: Protect permanent construction from damage, staining, or marring due to use of chutes, hoists, cranes, material elevator, derricks, scaffolds, staging, ramps, etc. Brace and guy securely and provide safety devices required by codes and regulations.
- E. Removal: Remove and relocate scaffolds to avoid interference with other trades. Remove temporary devices when no longer needed, and repair damage.

3.05 VENTILATION

- A. Low and/or Zero VOC finishes are specified for this project, but dust control will require the Contractor coordinate with Owner on existing HVAC systems to ensure proper ventilation to prevent accumulation of dust in adjacent spaces.

3.06 SANITARY FACILITIES

- A. Contractor may utilize existing sanitary facilities on the first floor of exhibits. After completion of Phase 1 work, the facilities will be open to the public. The facilities are maintained by the Museum's custodial services. Contractor must not dirty the facilities beyond that expected of ordinary use.

3.07 BARRIERS

- D. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that may be hazardous to workers or the public, to allow for Owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- E. Ensure barriers do not block required emergency egress paths.
- F. Provide barricades and covered walkways required by Code and governing authorities for public rights-of-way.
- G. Protect non-owned vehicles, stored materials, site, and structures from damage.

3.08 CLEANUP AND WASTE REMOVAL

- A. Remove staining or reactive materials from new and existing surfaces immediately during course of the Work.
- B. Confine or prohibit dust producing operations during construction.
- C. Remove hazardous accumulations of debris promptly, at least daily.
- D. Provide portable waste removal facilities and services as required to maintain the site in clean and orderly condition.
- E. Remove trash from site daily.

3.09 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
- C. Termination and Removal:
 - 1. Unless the Owner or Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion.
 - 2. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
 - 3. Clean and repair damage caused by installation or use of temporary work.
 - 4. Materials and facilities that constitute temporary facilities are property of the Contractor.

END OF SECTION

01 54 00 – CONSTRUCTION AIDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Furnish, install and maintain required Construction Aids.
- B. Required protection for delivery and installation of Construction Aids.
- C. Remove on completion of Work.

1.02 RELATED SECTIONS

- A. Section 01500 – Temporary Facilities and Controls
- B. Section 09910 - Painting

PART 2 PRODUCTS

2.01 MATERIALS

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required by personnel and to facilitate execution of the work; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.
 - 1. Refer to respective sections for particular requirements for each trade.
- B. Maintain facilities and equipment in first-class conditions.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate with Owner, review site conditions and factors which affect construction procedures and construction aids, including adjacent properties and public facilities which may be affected by execution of the Work.
- B. Protect all exterior landscape and hardscape elements, and all building elements potentially damaged by scaffolding installation, use, or removal. Methods of protection to be approved by the Owner.

3.02 GENERAL

- A. Comply with applicable requirements of the scaffolding, specified in sections of Division 9.

- B. Relocate construction aids as required by progress of construction, by storage or work requirements, and to accommodate legitimate requirements of Owner and other Contractors employed at the site.

3.03 REMOVAL

- A. Completely remove temporary materials, equipment and services:
 - 1. When construction needs can be met by use of permanent construction.
 - 2. At completion of Project or as directed by Construction Manager.
- B. Clean, restore and repair damage caused by installation or by use of temporary installations as required.
- C. Restore existing facilities used for temporary purposes to specified, or to original condition.

END OF SECTION

01 56 50 – SECURITY MEASURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Security measures including entry control, personnel identification, and miscellaneous restrictions.

1.02 RELATED SECTIONS

- A. Section 01510: Temporary Utilities: Temporary lighting.

1.03 SECURITY PROGRAM

- A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at project mobilization.
- C. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.

1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into Project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workers, make available to Owner on request.
- D. Owner will control entrance of person and vehicles related to Owner's operations.

1.05 PERSONNEL IDENTIFICATION – OWNER PROVIDED

- A. The Owner will provide identification badge to each person authorized to work at the premises.
- B. Badge to include: Personal photograph, name and employer.
- C. The Contractor shall maintain a list of accredited persons, submit copy to Owner.
 - 1. Require return of badges at expiration of their employment on the Work.

1.06 RESTRICTIONS

- A. Do not allow cameras on site or photographs taken except by written approval of Owner.
- B. Obtain written prior approval from the Owner to perform work on evenings, Saturdays, or Sundays.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

01 60 00 – PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Re-use of existing products
- B. Transportation, handling, storage and protection
- C. Product option requirements
- D. Substitution limitations and procedures
- E. Extra materials and maintenance materials

1.02 RELATED SECTIONS

- A. Document 00 10 00 – Information to Proposers: Product options and substitution procedures prior to proposal date.
- B. Section 00 10 10 – Substitution Request Form.
- C. Document 00 80 00 – Supplementary Conditions: Contractor representations.
- D. Section 01 40 00 – Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. Product Data Submittals – submit manufacturer’s standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer’s standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer’s standard colors, textures, and patterns.
 - 2. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. The re-use of certain materials and equipment already existing on the project site is required.

2.02 PRODUCT OPTIONS

- A. Products specified by reference standards or by description only: Provide any product meeting those standards or description.
- B. Products specified by naming one or more manufacturers or products: Provide a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

- C. Products specified by naming one or more manufacturers or products with a provision for substitutions: Submit a request for substitution for any manufacturer not named.

2.03 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- B. Substitution Submittal Procedure:
 - 1. Requests for substitution of products shall be accompanied by completed Substitution Request Form on a form identical to that provided with the Contract Documents.
 - 2. Submit two copies of request for substitution for consideration. Limit each request to one proposed substitution.
 - 3. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
 - 4. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 5. Requests for substitution of products shall include physical description of material and finish, dimensioned drawings, and salient performance characteristics, as required.
 - 6. The Architect will notify Contractor in writing of decision to accept or reject request.
- C. Contractor alone shall be responsible for substantiating acceptability of proposed substitutions. Architect's decision with respect to acceptance or non-acceptance of proposed substitutions shall be final.

3.02 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store off the site and premises and protect products in accordance with manufacturer's instructions.
- C. Store off the site and premises with seals and labels intact and legible until utilized or unwrapped at the site.
- D. Store sensitive products in weather tight, climate controlled enclosures in an environment favorable to product.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to handle and protect products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

01 70 00 – EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cleaning and protection.
- D. Closeout procedures, except payment procedures.

1.02 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures
- B. Section 01 40 00 – Quality Requirements: Testing and inspection procedures.
- C. Section 01 50 00 – Temporary Facilities and Controls

1.03 SUBMITTALS

- A. See Section 01300 – Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project
 - 2. Integrity of weather exposed or moisture resistant element
 - 3. Efficiency, maintenance, or safety of any operational element
 - 4. Visual qualities of sight exposed elements
 - 5. Work of State Preservation Board or separate Contractor
 - 6. Include in request:
 - i. Identification of Project
 - ii. Location and description of affected work
 - iii. Necessity for cutting or alteration
 - iv. Description of proposed work and products to be used
 - v. Alternatives to cutting and patching
 - vi. Effect on work of State Preservation Board or separate Contractor
 - vii. Written permission of affected separate Contractor
 - viii. Date and time work will be executed

1.04 PROJECT CONDITIONS

- A. **Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide means to prevent air-borne dust from dispersing into atmosphere and into adjacent spaces. Paths for negative air exhaust to the exterior of the building are not available. See Section 01 50 00, Temporary Facilities and Controls, for more detail.**
- B. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

- C. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from entering the building.
- D. Protect site from puddling or running water
- E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.05 COORDINATION

- A. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate occupancy requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordination work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. To the maximum extent feasible, conceal pipes, ducts, and wiring within the construction. Coordination locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: for any proposed change in materials, submit request for substitution described in section 01 60 00.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that demolition is complete in alterations areas and areas are ready for installation of new work.
- C. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- D. Examine and verify specific conditions described in individual specification sections.
- E. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
- F. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- G. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Prepare surfaces and remove surface finishes to provide for proper installation of new work and finishes.
- B. Clean substrate surfaces prior to applying next material or substance.
- C. Seal cracks or openings of substrate prior to applying next material or substance.
- D. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - a. Review conditions of examination, preparation, and installation procedures.
 - b. Review coordination with related work.
- E. Record minutes and distribute copies by email within two days after meeting to participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Establish elevations, lines, and levels. Locate and lay out by instrumentation and similar appropriate means:

- a. Grid or axis for walls
- b. Outlet locations
- E. Periodically verify layouts by same means.
- F. Maintain a complete and accurate log of control and survey work as it progresses.
- G. Verify existing conditions, including finish floor and adjacent wall locations.
- H. Update drawings with any deviation from dimensions indicated.

3.05 GENERAL INSTALLATION REQUIREMENTS

- I. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- J. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- K. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- L. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- M. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Notify Architect if any rotted wood, corroded metals, and deteriorated masonry and concrete are uncovered; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to HVAC, Electrical Power, Lighting Systems, Fire Alarm Systems, Fire Sprinkler Systems, Telecommunications, and Security Infrastructure): Remove, relocate and extend existing systems to accommodate new construction.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components, if necessary, modify installation to allow access or provide access panel.
 - i. Notify Owner and Architect at least 72 hours prior to any proposed scheduled outages. Depending on timing, Contractor may be required to reschedule.
 - ii. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - iii. See Section 01 10 00 for other limitations on outages and required notifications.
 - iv. Provide temporary connections as required to maintain existing systems in service.
2. Verify that abandoned services serve only abandoned facilities.
3. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
 1. Prevent movement of structure, provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch as specified for patching new work.
- F. Adapt existing work to fit new work: make as neat and smooth transitions as possible.
- G. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendations to the Architect.
- H. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceiling to a smooth plane without breaks, steps, or bulkheads.
- I. Where a change of plane of ¼ inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- J. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
 1. Patch as specified for patching new work. Make ductwork airtight.
- K. Clean existing systems and equipment.
- L. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- M. Do not begin new construction in alterations areas before demolition is complete.
- N. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements
- C. Perform whatever cutting and patching is necessary to:

- a. Complete the work
 - b. Fit products together to integrate with other work
 - c. Provide openings for penetration of mechanical, electrical, and other services.
 - d. Match work that has been cut to adjacent work.
 - e. Repair areas adjacent to cuts to required condition.
 - f. Repair new work damaged by subsequent work.
 - g. Remove samples of installed work for testing when requested.
 - h. Remove and replace defective and non-conforming work.
- D. Execute cutting and patching to complete the work, to uncover work to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetrations of mechanical or electrical work, to execute patching to complement adjacent work, and to fit projects together to integrate with other work.
- E. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools are not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
 - a. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - b. Match color, texture, and appearance.
 - c. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- J. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- K. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- L. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
 - a. Remove metal filings and process dust daily from work areas.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work, including landscaping, walkways, sidewalks, and curbs from damage by construction operations.
- B. Provide special protection where specified in individual specifications sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffit of openings.
- E. Protect finished floors, paving, stone curbs, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.09 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
 - a. Clean areas to be occupied by State Preservation Board prior to final completion before occupancy.
 - b. Use cleaning materials that are nonhazardous.
 - c. Clean interior and exterior glass, surfaces exposed to view, remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
 - d. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
 - e. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
 - f. Replace filters of operating equipment.
 - g. Clean debris from roofs, gutters, downspouts, and drainage systems.
 - h. Clean site; sweep paved areas, rake clean landscaped surfaces.
 - i. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in a legal manner; do not burn or bury.

- B. Notify Architect when work is considered ready for Substantial completion.

3.10 CLOSEOUT PROCEDURES

- C. Make submittals that are required by governing or other authorities.
- D. Notify Architect when work is considered ready for Substantial completion.
- E. Submit written certification that contract documents have been reviewed, work has been inspected, and that work is complete in accordance with contract Documents and ready for Architect's review.
- F. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to owner-occupied areas.
- G. Notify Architect when work is considered Finally Complete
- H. Complete items of work determined by Architect's Final Inspection.

END OF SECTION

01 73 50 – FIRE PREVENTION PRECAUTIONS FOR HOT WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Safeguards to be observed in performing hot work, including welding, soldering, brazing, and other operations where open flames or implements utilizing heat are used.

1.02 SAFETY PRECAUTIONS

- A. The Contractor shall ensure that operations involving the use of open-flame, electrical arc equipment or flammable substances are not conducted until a permit for welding, cutting, and burning has been completed, signed and issued by the State Preservation Board.
- B. Prior to commencing operations, a positive determination shall be made that it is impractical to conduct the hot work in a shop area or outside of the building. Coordinate suitable locations for hot equipment operations agreeable to the State Preservation Board.

1.03 NOTIFICATION

- A. The Contractor shall notify the State Preservation Board of the area of operations for each day and of all subsequent changes that occur.
- B. The Contractor shall notify the State Preservation Board of all locations where hot work has been performed not less than 30 minutes or more than 90 minutes after work is completed or stopped for the day.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 EXAMINATION

- A. Before starting operations, the Contractor shall furnish trained personnel to provide fire watches for locations where hot work is to be performed. One fire watcher may observe several locations in a relatively small contiguous area if approved by the State Fire Marshal.
 - a. Contractor shall furnish suitable type, fully-charged, operable portable fire extinguisher to each fire watcher.
 - b. The Contractor shall provide fire watchers who know how to operate the fire extinguisher, how to turn on a fire alarm and how to summon the fire department.
- B. Before starting operations, take suitable precautions to minimize the hazard of a fire communicating to the opposite side of walls, floor, ceilings and roofs from the operations.

3.02 SAFETY MEASURES

- A. Hot work shall not be done in or near rooms or areas where flammable liquids or explosive vapors are present or thought to be present. A combustible gas indicator (explosimeter) test

shall be conducted to assure that each area is safe. The Contractor is responsible for arranging and paying for each test.

- B. Insofar as possible, the Contractor shall remove and keep the area free from all combustibles, including rubbish, paper and waste within a radius of 25 feet from hot operations.
 - a. If combustible material cannot be removed, the Contractor shall furnish fireproof blankets to cover such materials.
 - b. Where possible, the Contractor shall furnish and use baffles of metal or gypsum board to prevent the spraying of sparks, hot slag and other hot particles into surrounding combustible material.
- C. The Contractor shall prevent the spread of sparks and particles of hot metal through open windows, doors, ad holes and cracks in floors, walls, ceilings, and roofs.
- D. Cylinders of gas used in hot work shall be placed a safe distance from the work. The Contractor shall provide hoses and equipment free of deterioration, malfunction and leaks. Suitable supports shall be provided to prevent accidental overturning of cylinders. All cylinder control valves shall be shut off while in use with the gas pressure regular set at 15 psi or less.
- E. When hot work operations are completed or ended for the day, each location of the day's work shall be inspected by the Contractor 30 minutes and 60 minutes after completion of operations to detect for hidden or smoldering fires and to ensure that proper housekeeping is maintained. Contractor shall clean up the area of work at the end of each shift or workday.
- F. Where sprinkler protection exists, the sprinkler system shall be maintained without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, gypsum board sheets or damp cloth guards may be used to shield the individual heads temporarily. The heads shall be inspected by the Contractor immediately after hot work operations cease, to ensure all materials have been removed from the heads and that the heads have not been damaged.
- G. Suitable type, fully-charged, operable portable fire extinguisher shall be available at all times during hot work operations.
- H. If any of the above safeguards are not employed, or are violated, the Owner's Representative may, by written notice, stop the work until compliance is obtained. Such stoppage shall not relieve the Contractor from performing his work within the Contract period for the Contract sum.

END OF SECTION

01 78 00 – CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents
- B. Operation and Maintenance Data
- C. Warranties and Bonds

1.02 RELATED SECTIONS

- A. Section 01300 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Individual Product Sections: Warranties required for specific products or Work.
- C. Individual Product Sections: Warranties as required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operations and Maintenance Data:
 - 1. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 2. Submit two sets of revised final documents in final form within 10 days after final inspection
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 - 2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 – PRODUCTS *NOT USED*

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work;
 - a. Drawings
 - b. Specifications

- c. Addenda
 - d. Change Orders and other modifications to the Contract
 - e. Reviewed shop drawings, product data, and samples
 - f. Manufacturer's instructions for assembly, installation, and adjusting
- B. Ensure entries are complete and accurate, enabling future reference by State Preservation Board.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - a. Manufacturer's name and product model and number.
 - b. Product substitutions utilized
 - c. Changes made by addenda and modifications.
- F. Record drawings and shop drawings: Legibly mark each item to record actual construction including:
 - a. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - b. Field changes of dimension and detail.
 - c. Details not on original contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- G. For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- H. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- I. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- J. Typed Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For each applied material, and finish, provide instructions for care and maintenance, manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For each item of equipment and each system:
 - a. Description of unit or system, and component parts.
 - b. Identify function, normal operating characteristics, and limiting conditions.

- c. Include performance curves, with engineering data and tests.
 - d. Complete nomenclature and model number of replaceable parts.
- B. Panel board Circuit Directories; Provide electrical service characteristics, controls, and communications typed or neatly hand lettered.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- J. Include test and balancing reports.
- K. Additional Requirements: as specified in individual product specification sections.

3.04 OPERATIONS AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.
- C. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.
- D. Table of Contents: Provide title of Project, names, addresses, and telephone numbers of Architect, consultants, and contractor with names of responsible parties; schedule of products and systems, indexed to content of the volume.

3.03 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project, name, address and telephone number of Contractor and equipment supplier, and name of responsible company principal

- F. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project manual, with each item identified with the number and title of the specification section in which specified, and the name of the product or work item.
- G. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

02 22 30 SELECTIVE DEMOLITION FOR REMODELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition and alteration of existing walls, plumbing, electrical, fire alarm, and HVAC systems as required to complete construction.
- B. Salvage of building elements for re-location
- C. Patching and repairs.
- D. Removal of designated building equipment and fixtures.
- E. Removal of designated construction.
- F. Storage of removed materials.
- G. Disposal of materials.
- H. Identification of utilities.
- I. Refer to items scheduled at end of section and on the drawings for scope and location of selective demolition.

1.02 RELATED SECTIONS

- A. Section 01100 - Summary: Work sequence.
- B. Section 01500 - Temporary Facilities and Controls: Temporary enclosures.
- C. Section 01700 - Execution Requirements: Re-installation of removed components.
- D. Section 01780 - Closeout Submittals: Project record documents.
- E. Section 09905 - Finish Removal

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Alterations Schedule: Before commencing demolition, submit for approval a preliminary schedule showing alterations which will be required under Contract. Where scope of alterations is unclear within a specific area, refer uncertainties to the Architect and obtain clarification prior to proceeding.
- C. Shop Drawings: Indicate demolition, removal sequence, and location of salvageable items; location and construction of temporary facilities. Include coordination for shut-off, capping, and continuation of utility services as required, coordinated with provisions for environmental and public protection and as follows:
 - a. Proposed noise control measures.
 - b. Proposed dust-control measures.
 - c. Field Measurements: Obtain field measurements in the areas to be demolished or removed for repair or alteration and subsequently restored. Determine line within which finish demolition will occur in relationship to a fixed building element and record required dimensional data within this line. Mark this line onto existing construction as guide to perform selective demolition. Offset lines of finish demolition at complex detail conditions as required to best accomplish uniformity with original finish in subsequent finish restoration. Show measurements on final shop drawings where shop drawings are required.
- D. Project Record Documents: Accurately record actual locations of capped utilities.

1.04 QUALITY ASSURANCE

- A. Engage an experienced firm and/or construction personnel who have successfully completed demolition work similar to that required for this project. Unless otherwise indicated, selective demolition shall be performed by general contractor's own forces, demolition subcontractor, or electrical subcontractor, as applicable. Some patching may be required on adjacent surfaces. Refer to applicable specification sections.
- B. Conduct a pre-demolition conference. Refer to Conditions of Contract for meeting requirements.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.
- B. Obtain required permits from authorities.
- C. Do not close or obstruct egress from any building exit or site exit.
- D. Do not disable or disrupt building fire, life safety, or security systems without 72 hours prior written notice to State Preservation Board.
- E. Obtain instruction from the Owner on how to sound fire alarms at the building facility and the locations of existing fire extinguishers and fire-fighting equipment. Obtain information from the Owner identifying locations of flammable liquids stored at the site and exhaust vent locations which may emit flammable materials or vapors.
 - a. Prepare a memorandum accompanied by building diagram showing relevant information and circulate to construction personnel.
- F. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered. Although no hazardous materials are suspected in this building completed in 2001, should the Contractor encounter suspected hazardous materials, it should immediately notify the owner's representative.

1.06 SEQUENCING

- A. Sequence work under the provisions of Section 01100.

1.07 SCHEDULING

- A. Schedule work under the provisions of Section 01325.

1.08 PROJECT CONDITIONS

- A. The project site is available for inspection prior to pricing the Work upon appointment with the Owner at those times available to all bidders. The Owner assumes no responsibility for the actual condition of the building to be selectively demolished.
- B. Conduct demolition to minimize interference with adjacent building areas.
- C. Provide interior and exterior shoring, bracing, or support as required to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or work to remain.
- D. Protect from damage existing finish work including fixtures and furnishings that are to remain in place and becomes exposed during selective demolition operations.
- E. Protect walls and finishes to remain free from marring and other damage. Maintain and leave protection in place until surface protected is no longer subject to damage by construction operations.
- F. Remove carefully and protect items indicated to be reused. Store carefully in a safe location until reinstalled. Assume responsibility for safe storage and handling.

- G. Damages: Promptly repair damages caused to adjacent finishes or facilities by demolition work to condition equivalent to that when work commenced at no additional cost to Owner.
- H. Cease operations immediately if structure appears to be in danger and notify Architect. Do not resume operations until directed.
- I. Contractor's Property: Rubbish and debris created by demolition and alteration work, including cutting and drilling, patching and repair, and other demolished or removed materials and equipment not to be reused in the Work under this Contract, and not indicated to remain Owner's property, or selected by Owner to remain Owner's property, shall become Contractor's property.

1.09 WASTE MANAGEMENT

- A. Divert as much waste as possible to be recycled rather than delivered to a landfill.

1.10 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.11 QUALITY CONTROL

- A. Mockups: Prepare mockups of selective demolition to show techniques and skill of subcontractor, including methods and equipment used, protection of surrounding surfaces.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Report discrepancies to State Preservation Board before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Maintain weatherproof closures for exterior openings.
- B. Protect existing finishes, furnishings and equipment that are not to be demolished.
 - a. Protect walls and interior finishes to remain from marring and other damage.
 - b. Maintain and leave protection in place until surface protected is no longer subject to damage by construction operations.
- C. Prevent movement of structure; provide bracing and shoring as necessary.
- D. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- E. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- F. Existing Electrical Service To The Building: Maintain existing system in service throughout demolition. Disable circuits only to make switchovers and connections. Confirm operational impact of de-energizing circuits, and minimize outage duration. Some circuits which impact operations beyond the work area can only be de-energized before the Museum opens to the public at 9 am.
 - a. Obtain permission from State Preservation Board at least 72 hours before partially or completely disabling system.

- b. Make temporary connections to maintain service in areas adjacent to work area.
- G. Existing Fire Alarm System: Maintain existing system in service as devices are added or relocated. Disable system only to make switchovers and connections, outside of Museum opening hours. Minimize outage duration.
 - a. Notify State Preservation Board before partially or completely disabling system.
 - b. Notify local fire service.
 - c. Make notifications at least 72 hours in advance.
 - d. Make temporary connections to maintain service in areas adjacent to work area.
- H. Existing Security System: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections outside Museum opening hours. Minimize outage duration.
 - a. Notify State Preservation Board at least 24 hours before partially or completely disabling system.
- I. Notify affected utility companies before starting work and comply with their requirements.
- J. Mark location and termination of utilities in record documents.
- K. Provide appropriate temporary signage including signage for exit or building egress.

3.03 GENERAL

- A. Disconnect, cap, and identify designated utilities within demolition areas.
- B. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces to be restored.
- C. Do not use cutting torches or explosive actuated devices.
- D. When removing existing finishes, completely remove loose materials and damaged substrate materials.
- E. Leave exposed substrates completely free from materials that would interfere with bond or proper attachment of new or salvaged materials.

3.04 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction. Existing electrical as noted.
 - a. All abandoned outlets to be removed and patched, if not re-used or replaced. Refer to Electrical plans for new devices. Use all existing box locations if possible to minimize patching.
 - b. All new outlets and fire alarm devices to be placed with new wiring, shall be in new conduit unless otherwise approved by Architect/Engineer.
 - c. Remove abandoned wiring to source of supply.
 - d. Remove exposed abandoned conduit as completely as is practicable, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
 - e. Remove abandoned panel boards and distribution equipment.
 - f. Disconnect and remove electrical devices serving equipment that has been removed.
- B. Repair adjacent construction and finishes damaged during demolition and extension work.
- C. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
- D. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.05 CLEANING

- A. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- B. Remove materials as demolition progresses. Upon completion of demolition, leave areas in clean condition.
 - a. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
 - b. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
 - c. Clean adjacent properties free of dust, dirt, and debris caused by selective demolition.
- C. Remove temporary facilities.

3.06 PATCHING AND REPAIRS

- A. Fire-stop holes in all interior partitions and structure to remain, if openings between floors are created as a consequence of demolition. At Contractor's option, openings in concrete and masonry may be temporarily covered with noncombustible board material and filled with fire-stopping insulation.

3.07 SALVAGE

- A. Salvage requirements of this project consist of one fire door at fire stair #3, to be relocated per the plans. Remove door carefully, carefully detaching wiring and conserving frame, for re-placement in adjacent new opening.

END OF SECTION

05 40 00 – COLD FORMED METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cold-formed metal framing and supplementary items required for installation.
- B. For nonload-bearing metal-stud framing and ceiling-suspension assemblies refer to Division 9 Section "Gypsum Board Assemblies".

1.02 SUMMARY

- A. This is a performance specification and the cold-formed steel stud framing. Fabricator shall be responsible for structural design and engineering required to meet specified performance requirements within physical and aesthetic requirements established.
- B. Contract Documents are an outline of criteria and performance requirements for the System. Requirements specified or indicated by details are intended to establish aesthetic design requirements and performance of exterior and interior finish materials.
- C. Drawings do not necessarily indicate or describe total work required for completion of Work. Furnish and install all items required for complete installation.
- D. Dimension and profile adjustments may be made in proposed structural design in interest of fabrication or erection methods or techniques, weatherability factor, or ability of design to satisfy design and performance requirements, provided that aesthetic design intent and intent of Contract Documents are maintained. Include modifications or additions required to meet specified requirements and maintain the visual design concept.

1.03 SYSTEM PERFORMANCE REQUIREMENTS

- A. AISI "Specifications": Calculate structural characteristics of cold-formed steel stud framing according to AISI's "Specification for the Design of Cold-Formed Steel Structural Members" and following:
 - a. Center for Cold-Formed Steel Structures (CCFSS) Technical Bulletin, Vol. 2, No. 1, February 1993 "AISI Specification Provisions for Screw Connections."
- B. Structural Performance: Engineer, fabricate, and erect cold-formed steel stud framing to withstand design loads within limits and under conditions required.
 - a. Design Loads: As required by local building code and Design Wind Pressure Schedule.
 - b. Design framing systems to withstand design loads without deflections greater than following:
 - i. Exterior Load-Bearing Walls: Lateral deflection of 1/360 of wall height.
 - ii. Interior Load-Bearing Walls: Lateral deflection of 1/360 of wall height.
 - iii. Exterior Nonload-Bearing Curtainwall: Lateral deflection of 1/360 of the wall height.
 - c. Design framing systems to provide for movement of framing members without damage to interior finishes, exterior finishes, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change (range) of 120 deg F (67 deg C).

- d. Design framing system to accommodate deflection of primary building structure and construction tolerances, and to maintain clearances at openings.
- e. System design shall maintain visual design concept and incorporate an expansion and contraction joint located above ceiling line to isolate movement between interior and exterior finishes.
- f. Stud depth and maximum spacing indicated is critical for performance of other materials and shall not change without consideration of performance of materials dependent upon indicated depth and spacing. Spacing where indicated shall be construed to imply maximum spacing.
- C. Design exterior nonload-bearing curtainwall framing to accommodate lateral deflection without regard to contribution of sheathing materials.
- D. Engineering Responsibility: Engage fabricator who assumes undivided responsibility for engineering cold-formed steel stud framing by employing a qualified professional engineer to prepare and seal design calculations, shop drawings, and other structural data.

1.04 SUBMITTALS

- A. Product data for each type of cold-formed steel stud framing, accessory, and product specified.
- B. Shop drawings showing layout, spacings, sizes, thicknesses, and types of cold-formed steel stud framing, fabrication, fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachments to other units of Work.
 - a. Include setting drawings, templates, and directions for the installation of anchor bolts and other anchorages installed as a unit of work under other sections.
 - b. If deviations are proposed indicate where and how the proposed system deviates from Contract Documents.
 - c. Shop drawings shall contain seal of a professional engineer currently registered in licensing jurisdiction of the project and a written statement that the wall system conforms to project requirements, applicable codes, and specified conditions.
 - d. Provide for information only, material properties and other information needed for structural analysis including computations, prepared, signed, and sealed by a professional engineer licensed to practice in the jurisdiction where the project is located.
- C. Mill certificates signed by manufacturers of cold-formed steel stud framing certifying that their products comply with requirements, including uncoated steel thickness, yield strength, tensile strength, total elongation, and galvanized-coating thickness.
 - a. In lieu of mill certificates, submit test reports from qualified independent testing agency evidencing compliance with requirements.
- D. Welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" Article.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project

names and addresses, names and addresses of architects and owners, and other information specified.

- F. Product test reports from qualified independent testing agency evidencing compliance with requirements of following based on comprehensive testing:
 - a. Expansion anchors.
 - b. Powder-actuated anchors.
 - c. Mechanical fasteners.
- G. Research reports or evaluation reports of model code organization acceptable to authorities having jurisdiction that evidence cold-formed steel stud framing's compliance with building code in effect for Project.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Engage experienced Installer who has completed cold-formed steel stud framing similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Testing Agency Qualifications: To qualify for acceptance, independent testing agency must demonstrate to Architect's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has experience and capability to satisfactorily conduct the testing indicated without delaying Work.
- C. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code--Steel" and AWS D1.3 "Structural Welding Code--Sheet Steel."
 - a. Certify that each welder has satisfactorily passed within last year AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
 - b. Professional Engineer Qualifications: A professional engineer legally authorized to practice in the jurisdiction where Project is located and experienced in providing engineering services of the kind indicated that have resulted in the installation of cold-formed steel stud framing similar to this Project in material, design, and extent and that have a record of successful in-service performance.

1.06 PROPOSED SUBSTITUTIONS

- A. Refer to Division 1 Section "Product Substitution Procedures".
- B. Substitutions of sections or modifications of details, if proposed by Contractor, shall be submitted for approval in sketch form prior to submission of shop drawings, and such substitutions shall be made only when approved by Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with submission.
 - a. Proposed substitution shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
 - b. Drawings have not been designed to accommodate balloon framing. Balloon framing past floors shall not be allowed unless provisions are made to accommodate differential movement between exterior and interior finish material, and floors.

PART 2- PRODUCTS

A.01 MATERIALS

- A. Galvanized-Steel Sheet: ASTM A 653 (ASTM A 653M), zinc coated, and as follows:
 - a. Coating Designation: G 90 (Z 275).
 - b. Grade for 0.0474 inch (1.20 mm) (18-gage): Grade 33, 33,000 psi (230 MPa) minimum yield strength, 20 percent elongation.
 - c. Grade for 0.0598 inch (1.52 mm) (16 gage) and thicker: Grade 50, 50,000 psi (345 MPa) minimum yield strength, 12 percent elongation.

A.02 WALL FRAMING

- A. Steel Studs: Manufacturer's standard galvanized C-shaped steel studs of web depths indicated, with lipped flanges, and complying with following:
 - a. Design Uncoated-Steel Thickness: 0.0474 inch (1.20 mm) (18-gage) minimum to 0.1046 inch (2.66 mm) (12 gage maximum).
 - b. Flange Width: 1-5/8 inches (41 mm) minimum.
 - c. Web: Punched.
 - d. Steel Track: Manufacturer's standard galvanized U-shaped steel track, of web depths indicated, with straight flanges, and complying with following:
 - i. Design Uncoated-Steel Thickness: Matching steel studs.
 - ii. Flange Width: Manufacturers standard deep flange (minimum 2 inches) at exterior walls where studs occur between structural floors, standard flange elsewhere.
 - iii. Web: Bottom track punched with 1 inch diameter holes at 24 inches on center, to prevent track from holding water.

A.03 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi (230 MPa).
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
 - a. Supplementary framing.
 - b. Bracing, bridging, and solid blocking.
 - c. Web stiffeners.
 - d. Gusset plates.
 - e. Deflection track.
 - f. Stud kickers and girts.
 - g. Reinforcement plates.

A.04 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36 (ASTM A 36M), zinc coated by the hot-dip process according to ASTM A 123.
- B. Cast-in-Place Anchor Bolts and Studs: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel hex-head bolts and studs; carbon-steel nuts; and flat, unhardened-steel washers. Zinc coated by hot-dip process according to ASTM A 153.
- C. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, load equal to 5 times the design load, as determined by testing per ASTM E 488 conducted by qualified independent testing agency.
- D. Powder-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times the design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.
- E. Mechanical Fasteners: Corrosion-resistant coated, self-drilling, self-threading steel drill screws.
 - a. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

A.05 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035, with dry film containing a minimum of 94 percent zinc dust by weight.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and a 30-minute working time.
- C. Thermal Insulation: For boxed-in sections, ASTM C 665, Type I, unfaced mineral-fiber blankets produced by combining glass or slag fibers with thermosetting resins.

A.06 FABRICATION

- A. Fabricate cold-formed steel stud framing and accessories plumb, square, true to line, and with connections securely fastened, according to manufacturer's recommendations and the requirements of this Section.
- B. Fabricate framing assemblies in jig templates.
- C. Cut framing members by sawing or shearing; do not torch cut.
- D. Fasten cold-formed steel stud framing members by welding or screw fastening. Shop welding of 0.0747 inch (1.90 mm) (14 gage) or thicker components is acceptable. Wire tying of framing members is not permitted.
- E. Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
- F. (a) Locate mechanical fasteners and install according to cold-framed steel stud framing manufacturer's instructions with screw penetrating joined members by not less than 3 exposed screw threads.

- G. Fasten other materials to cold-formed steel stud framing by welding, bolting, or screw fastening, according to manufacturer's recommendations.
- H. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or distortion.
- I. Fabrication Tolerances: Fabricate assemblies to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8 inch in 10 feet (1:960) and as follows:
- J. Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
- K. Squareness: Fabricate each cold-formed steel stud framing assembly to a maximum out-of-square tolerance of 1/8 inch (3 mm).

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements, including installation tolerances and other conditions affecting performance of cold-formed steel stud framing. Do not proceed with installation until unsatisfactory conditions have been corrected. Starting of work within a particular area will be construed as installers acceptance of conditions.

3.02 INSTALLATION, GENERAL

- A. Cold-formed steel stud framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed steel stud framing according to ASTM C 1007, unless more stringent requirements are indicated or required by conditions.
- C. Install cold-formed steel stud framing and accessories plumb, square, true to line, and with connections securely fastened, according to manufacturer's recommendations and the requirements of this Section.
- D. Space studs at 16 inches on center maximum unless otherwise indicated.
- E. Cut framing members by sawing or shearing; do not torch cut.
- F. Fasten cold-formed steel stud framing members by screw fastening. Wire tying of framing members is not permitted.
- G. Locate mechanical fasteners and install according to cold-framed steel stud framing manufacturer's instructions with screw penetrating joined members by not less than 3 exposed screw threads.
- H. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.
- I. Provide temporary bracing and leave in place until framing is permanently stabilized.
- J. Do not bridge building expansion and control joints with cold-formed steel stud framing. Independently frame both sides of joints.

- K. Install insulation in built-up exterior framing members, such as headers, sills, boxed joists, and double studs, inaccessible upon completion of framing work.
- L. Fasten reinforcement plate over web penetrations that exceed size of manufacturer's standard punched openings.
- M. Erection Tolerances: Install cold-formed steel stud framing to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8 inch in 10 feet (1:960) and as follows:
- N. Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.03 NONLOAD-BEARING CURTAINWALL INSTALLATION

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- B. Squarely seat studs against webs of top and bottom tracks. Fasten both flanges of studs to top and bottom track, unless otherwise indicated.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- D. Isolate steel framing from building structure at locations indicated to prevent transfer of vertical loads while providing lateral support.
- E. Install deflection track and anchor to building structure.
- F. Connect studs with vertical slide expansion/contraction joint and supplementary framing anchored to building structure.
- G. Install horizontal bridging in curtainwall studs, spaced in rows not more than 48 inches (1219 mm) apart. Fasten at each stud intersection.
- H. Install additional row of horizontal bridging in curtainwall stud beneath deflection track when curtainwall studs are not fastened to an additional top track.
- I. Bridging: Cold-rolled steel channel, clip angle fastened to webs of punched studs or flat, steel-sheet straps of width and thickness indicated, fastened to stud flanges.
- J. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable curtainwall-framing system.

3.04 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel stud framing with galvanizing repair paint according to ASTM A 780 and manufacturer's instructions.
- B. Provide final protection and maintain conditions in a manner acceptable to manufacturer and Installer to ensure that cold-formed steel stud framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

05 50 00 – METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal fabrications and supplementary items required for installation.

1.02 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements

1.03 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for products used in miscellaneous metal fabrications, including paint products and grout.
- C. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.
- D. Samples representative of materials and finished products as may be requested by Architect.
- E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" article.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.
- B. Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code - Steel," D1.3 "Structural Welding Code - Sheet Steel", and D1.2 "Structural Welding Code - Aluminum."
 - a. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.05 REGULATORY REQUIREMENTS

- A. Conform to all regulatory requirements relevant to the installation.

1.06 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of Work.
 - a. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabrication of products without field measurements.
 - b. Coordinate construction to ensure that actual opening dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

PART 2 - PRODUCTS

2.01 FERROUS METALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names or roughness.
- B. Steel Plates, Shapes, and Bars: ASTM A 36.
- C. Steel Tubing: Cold-Formed Steel Tubing, ASTM A 500.
- D. Uncoated Steel Sheet: Commercial quality, Cold-Rolled Steel Sheet, ASTM A 366.
- E. Galvanized Steel Sheet: Quality as follows: Commercial Quality: ASTM A 653, G90 coating designation.
- F. Steel Pipe: ASTM A 53; finish, and weight class as follows:
 - a. Black finish, unless otherwise indicated.
 - b. Galvanized finish for exterior installations and where indicated.
 - c. Standard weight (schedule 40), unless otherwise indicated, or another weight required by structural loads.
- G. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications for the metal alloy to be welded.

2.02 GROUT

- A. Nonshrink Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.03 FASTENERS

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating, for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.

METAL FABRICATIONS

- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568, Property Class 4.6), with hex nuts, ASTM A 563 (ASTM A 563M), and, where indicated, flat washers.
- C. Machine Screws: ANSI B18.6.3.
- D. Lag Bolts: ANSI B18.2.1 (ANSI B18.2.3.8M).
- E. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - a. Interior Material: Carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - b. Exterior material: Group 1 alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F 593 (ASTM F 738M) and ASTM F 594 (ASTM F 836M).
- F. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as required.
- G. Cast-in-Place Anchors: As specified in Division 3 Section "Concrete Accessories".

2.04 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- C. Allow for thermal movement resulting from 100 deg. F. (55.5 deg. C) maximum change (range) in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
- D. Shear and punch metals cleanly and accurately. Remove burrs.
- E. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- F. Remove sharp or rough areas on exposed traffic surfaces.
- G. Weld corners and seams continuously to comply with the following:
 - a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - b. Obtain fusion without undercut or overlap.
 - c. Remove welding flux immediately.
 - d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

METAL FABRICATIONS

- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support intended loads.
- J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- K. Cut, reinforce, drill and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- L. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.05 ROUGH HARDWARE

- A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 sections.
- B. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; and furnish steel washers elsewhere.

2.06 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

2.07 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Weld adjoining members together to form a single unit where indicated.
- C. Size loose lintels for equal bearing of one inch per foot of clear span but not less than 8 inches bearing at each side of openings, unless otherwise indicated.
- D. Galvanize loose steel lintels located in exterior walls.

2.08 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports for applications indicated or which are not a part of structural steel framework, as required to complete work.

METAL FABRICATIONS

- B. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent other construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - a. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.
 - i. Except as otherwise indicated, space anchors 24 inches o.c. and provide minimum anchor units in the form of steel straps 1-1/4 inches wide x 1/4 inch x 8 inches long.
- C. Galvanize miscellaneous framing and supports in exterior locations.

2.09 STEEL FINISHES

- A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes. Finish metal fabrications after assembly.
- B. Galvanizing: For those items indicated for galvanizing, apply zinc-coating by the hot-dip process compliance with the following requirements:
 - a. ASTM A 153 for galvanizing iron and steel hardware.
 - b. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, bars, and strip 0.0299 inch thick and heavier.
- C. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
 - a. Exteriors: SSPC-SP6 "Commercial Blast Cleaning."
 - b. Interiors: SSPC-SP3 "Power Tool Cleaning:"
- D. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finish or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting.
 - a. Stripe paint edges, corners, crevices, bolts, welds, and sharp edges.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.02 INSTALLATION, GENERAL

METAL FABRICATIONS

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required. Install expansion and adhesive anchors specified in Division 3 Section "Concrete Accessories".
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with following requirements:
 - a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - b. Obtain fusion without undercut or overlap.
 - c. Remove welding flux immediately.
 - d. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

3.03 SETTING LOOSE PLATES

- A. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
- B. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
 - a. Use nonmetallic nonshrink grout.
 - b. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.04 ADJUSTING AND CLEANING

- A. For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

METAL FABRICATIONS

SPB Project 809-XX-XXXX
9/10/14

Bob Bullock Texas State History Museum
Imax Theater Exterior Wall Opening

END OF SECTION

METAL FABRICATIONS

08 14 00 – WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid core flush wood veneered doors and wood frames.

1.02 REFERENCES

- A. Standards: Unless otherwise specified, comply with the applicable requirements of the "Architectural Woodwork Standards" (First Edition-2009) (AWS).

1.03 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements
- E. Section 08 71 00 – Finish Hardware

1.04 SUBMITTALS

- A. Product Data: Catalog sheets, specifications, and installation instructions for each type door specified.
- B. Shop Drawings: Include details of frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of frame anchorage, finish hardware and reinforcements, and details of joints and connections.

1.05 QUALITY ASSURANCE

- A. Certifications: Affidavit by door manufacturer certifying that each door meets the specified requirements and standards.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Factory Finished Doors: Deliver doors in factory applied plastic bags or heavy paper protective cartons. Mark packaging with sufficient identification to insure proper door location.
- B. Comply with manufacturer's storage instructions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Lumber: Comply with applicable AWS species requirements for door type and grade.
 - a. Exposed Surfaces: As indicated on the Drawings or specified. Furnish matching exposed surface material on both faces and both edges of each door unless otherwise indicated.
- B. Wood Veneers: Comply with applicable AWS species requirements for door type and grade.
- C. Glue: Type I waterproof adhesives for bonding faces and crossbands to core, for both exterior and interior door fabrication.

2.02 FABRICATION

- A. Interior Flush Wood Doors (Non-Fire Rated): 2 or 3 ply face panel construction each side over a solid glued wood block (stave) core edge bonded to stiles and rails, complying with AWS SLC-5 or SLC-7; or 2 or 3 ply face panel construction each side over a solid wood particleboard core edge bonded to stiles and rails, complying with AWS PC-5 or PC-7.
- B. Exposed Surfaces for Paint Finish: Medium density overlay face over standard thickness hardwood face veneers, or AWS Custom Grade rotary cut birch face veneers. Close grain hardwood for exposed edges and all other solid wood components.
- C. Provide doors pre-hung in wood frames. No threshold will be used at wood door locations, to minimize impact on existing floor at temporary wall locations.

2.03 FACTORY PRIMING

- A. Factory Priming for Doors to Receive Paint Finish: Shop apply prime coat on all exposed surfaces and edges of wood doors scheduled or indicated to receive paint finish as follows:
 - a. Interior doors: Enamel undercoat.

PART 3 EXECUTION

3.01 PREPARATION

- A. Condition doors to average prevailing humidity in installation area prior to hanging.
- B. Touch-up cut surfaces of factory primed doors with primer compatible with primer specified for factory priming.

3.02 INSTALLATION

- A. Install the Work of this Section in accordance with manufacturer's printed installation instructions, except as shown or specified otherwise.
- B. Fit doors to prepared frames for proper fit. Allow 3/32 to 1/8 inch clearance at head and both jambs. Trim doors when necessary by planing. Slightly chamfer edge of lock stiles. Bevel lock stile as follows:
 - a. Non-fire Rated Doors: 1/8 inch in 2 inches.

END OF SECTION

08 71 00 – FINISH HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Finish hardware for doors.

1.02 REFERENCES

- A. NFPA 80 Standard for Fire Doors and Other Opening Protectives (2013).
- B. NFPA 101 Life Safety Code (2012).
- C. SDI/DOOR A250.8 Recommended Specifications for Standard Steel Doors and Frames (2003; R2008)
- D. 2012 International Building Code
- E. ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
- F. ANSI/BHMA Standard A156.1 Butts and Hinges (2013).
- G. ANSI/BHMA Standard A156.4 Door Controls – Closers (2013).
- H. ANSI/BHMA Standard A156.6 Architectural Door Trim (2010).
- I. ANSI/BHMA Standard A156.7 Template Hinge Dimensions (2003; R 2009).
- J. ANSI/BHMA Standard A156.8 Door Controls – Overhead Stops and Holders (2010).
- K. ANSI/BHMA Standard A156.16 Auxiliary Hardware (2008).
- L. ANSI/BHMA Standard A156.18 Materials and Finishes (2006).
- M. ANSI/BHMA Standard A156.22 Door Gasketing Systems (2010).
- N. DHI - Door and Hardware Institute.
- O. NAAM Standard HMMA 800-96- Hollow Metal Manufacturers Association.
- P. NAAM Standard HMMA 831-97 Recommended Hardware Locations for Custom Hollow Metal Doors and Frames.
- Q. 2010 Standards for State and Local Government Facilities: Title II.

1.03 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements
- E. Section 08 11 50 – Hollow Metal Doors and Frames
- F. Section 08 14 00 – Wood Doors and Frames

1.04 SUBMITTALS

- A. Product Data: Catalog sheets, specifications, and installation instructions for each hardware item specified.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery to avoid delay.
- B. Clearly label each item for identification and installation location as it corresponds to the approved Finish Hardware Schedule and subsequent information bulletins.
- C. Deliver hardware to the jobsite in the manufacturers' original packages complete with fasteners, parts, installation instructions, and templates required for proper installation.
- D. Inventory hardware at jobsite to identify shortages or backorders. Resolve delivery shortages and damaged items prior to installing hardware.

PART 2 PRODUCTS

2.01 HARDWARE FOR FIRE DOORS AND EXIT DOORS

- A. Provide all hardware necessary to meet the requirements of NFPA 80 for fire doors and NFPA 101 for exit doors, as well as to other requirements indicated, even if such hardware is not specifically mentioned otherwise in drawings and specifications. Provide the label of Underwriter's Laboratories, Inc. for such hardware. Use salvaged hardware from existing fire and exit door being relocated, as feasible.

2.02 ACCESSORIES

- A. Provide brackets, plates, arms, spacers, and special templates to mount door closers in combination with overhead stops and coordinators, on narrow top rails and for special ceiling and jamb conditions.

2.03 FASTENINGS

- A. Provide fasteners that harmonize with finish hardware material and finish.
- B. Attach door closers and overhead stops with sex bolts.

2.04 MATERIALS AND FINISHES

- A. General: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in this section and in the Hardware Groups.
- B. Closers and Door Control Devices
 - a. Closer bodies: Provide closer bodies with the same hole template pattern regardless of type or application.
 - b. Closer arms: Non-handed forged steel.
 - c. Closer size: Provide sized closers.
 - d. Powder coat closer body, arm, and adapter plate or pre-treat closer body, arm, and adapter plate with rust-inhibiting coating before painted finish is applied.

- C. Hinges: ANSI/BHMA A156.1, 114 by 114 mm 4-1/2 by 4-1/2 inch unless otherwise Indicated or required. Construct loose pin hinges for exterior doors and reverse-bevel interior doors so that pins will be nonremovable when door is closed. Other antifriction bearing hinges may be provided in lieu of ball-bearing hinges.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine doors and frames and related items for conditions such as, but not limited to, incorrect handing, hardware preparation, misaligned lock and strike preparations, that would prevent proper application of finish hardware. Do not proceed until defects are corrected.
- B. Report conditions or hardware applications that are incorrect to the Owner's Representative.
- C. Install hardware in accordance with manufacturer's printed installation instructions, and adjust for smooth operation, free of sticking, binding or rattling.
 - a. Template surface overhead stops and holders for proper operation
 - b. Template and adjust closers for proper operation.

3.02 INSTALLATION

- A. Install the Work of this Section in accordance with manufacturer's printed installation instructions, except as shown or specified otherwise.
- B. Fit doors to prepared frames for proper fit. Allow 3/32 to 1/8 inch clearance at head and both jambs. Trim doors when necessary by planing. Slightly chamfer edge of lock stiles. Bevel lock stile as follows:
 - a. Non-fire Rated Doors: 1/8 inch in 2 inches.

END OF SECTION

09 26 00 – GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum board wall and ceiling assemblies and supplementary items required for installation.

1.02 DEFINITIONS

- A. Refer to ASTM C 11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in this Section or in other referenced standards.

1.03 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements
- E. Section 05 40 00 – Cold Formed Metal Framing
- F. Section 09 26 50 – Finishing of Gypsum Board

1.04 SUBMITTALS

- A. Manufacturer's product data for each product specified.

1.05 QUALITY ASSURANCE

- A. Perform gypsum board systems work in accordance with recommendations of ASTM C 754 and GA 216 unless otherwise specified in this section.
- B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.
- C. Fire-Test-Response Characteristics: Where fire-resistance-rated gypsum board assemblies are indicated, provide gypsum board assemblies that comply with the following requirements:
 - a. Fire-Resistance Ratings: As indicated by GA File Numbers in GA-600 "Fire Resistance Design Manual" or design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.
 - b. Gypsum board assemblies indicated are identical to assemblies tested for fire resistance according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
 - c. Deflection and Firestop Track: Top runner provided in fire-resistance-rated assemblies indicated is labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

- D. Single-Source Responsibility: Obtain following from single manufacturer.
 - a. Metal framing members.
 - b. Gypsum board and other panel products.
 - c. Finishing materials.

1.06 REGULATORY REQUIREMENTS

- A. Conform to all regulatory requirements relevant to the installation.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.
- C. Handle gypsum board to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.08 PROJECT CONDITIONS

- A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 requirements or gypsum board manufacturer's recommendations, whichever are more stringent.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturer shall be as listed below.

2.02 METAL FRAMING FOR WALLS AND PARTITIONS

- A. General: Provide metal framing members of sizes and spacings indicated but not less than that required to comply with ASTM C 754 under the following maximum deflection and lateral loading conditions:
 - a. Maximum Deflection: $L/240$ at 5 lbf per sq. ft.
 - b. Protective Coating: G40 hot-dip galvanized coating per ASTM A 653.
- B. Metal Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 deg and doubled over to form 3/16-inch-wide minimum lip (return) and minimum thickness of base (uncoated) metal of 0.0270 inch unless otherwise indicated.
- C. Deflection Track: Manufacturer's standard top runner designed to prevent cracking of gypsum board applied to interior partitions resulting from deflection of the structure above fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M). Thickness as indicated for studs, and width to accommodate depth of studs, and of the following configuration:
 - a. Top runner with 2-1/2-inch- (63.5-mm-) deep flanges that either have V-shaped offsets that compress when pressure is applied from construction above or have slots 1 inch (25.4 mm) o.c.

that allow fasteners attached to studs through the slots to accommodate structural movement by slipping.

- b. Acceptable Manufacturers/Products:
 - Superior Flex Track System (SFT); Delta Star, Inc.
 - SLP-TRK; Metal-Lite, Inc.
- D. Metal Rigid Furring Channels: ASTM C 645, hat-shaped, depth of 7/8 inch and minimum thickness of base (uncoated) metal of 0.0179 inch unless otherwise indicated.
- E. Steel Resilient Furring Channels: Manufacturer's standard product designed to reduce sound transmission, fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M) to form ½-inch- (12.7-mm-) deep channel of the following configuration:
 - a. Single- or Double-Leg Configuration: Asymmetric-shaped channel with face connected to a single flange by a single-slotted leg (web) or hat-shaped channel, with 1-1/2-inch- (38.1-mm-) wide face connected to flanges by double-slotted or expanded-metal legs (webs).
- F. Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.
- G. Acceptable Manufacturers:
 - Delta Metal Products, Inc.
 - Dale Industries, Inc. - Dale/Incor
 - Dietrich Industries Inc.
 - Marino Industries
 - Maverick Steel Corporation
 - National Gypsum Company - Gold Bond Division
 - Unimast Incorporated
- H. Metal Studs Schedule:
 - a. 25 gage Studs are not acceptable.
 - b. 22 Gage Studs: Typical unless otherwise indicated.
 - c. 20 Gage Studs:
 - i. Where wall height exceeds stud manufacturer's published literature for 22 gage stud's allowable limiting height for L/240 deflection with a 5 psf lateral load.
 - ii. Typical at walls with ceramic tile.
 - iii. Typical at walls with gypsum wallboard one side only.
 - iv. Typical at door jambs.
 - d. 18 Gage Studs:
 - i. Where wall height exceeds stud manufacturer's published literature for 20 gage studs's allowable limiting height for L/240 deflection with a 5 psf lateral load.
 - ii. Typical at walls with attached stone veneers.

- iii. Typical at walls with wall hung cabinets or shelving.

2.03 GYPSUM BOARD PRODUCTS

- A. General: Provide gypsum board in maximum lengths available that will minimize end-to-end butt joints in each area indicated to receive gypsum board application.
- B. Gypsum Wallboard: ASTM C 36, Type X, tapered edges, 5/8 inch thick unless otherwise indicated.
- C. Water-Resistant Gypsum Backing Board: ASTM C 630, Type X, 5/8 inch thick, unless otherwise indicated.

2.04 ACOUSTICAL SEALANT

- A. Acoustical Sealant for Exposed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following requirements:
 - a. Product is effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies per ASTM E 90.
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard nondrying, nonhardening, nonskinny, nonstaining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound
- C. Acceptable Manufacturer:
 - a. Acoustical Sealant for Exposed Joints:
 - i. AC-20 FTR Acoustical and Insulation Sealant, Pecora Corp.
 - ii. SHEETROCK Acoustical Sealant, United States Gypsum Co.
 - b. Acoustical Sealant for Concealed Joints:
 - i. BA-98, Pecora Corp.
 - ii. Tremco Acoustical Sealant, Tremco, Inc.

2.03 ACCESSORIES

- A. General: Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.
- B. Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum panels.
- C. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot grouting hollow metal door frames.
- D. Neoprene Fillers: R-431-N Black closed cell neoprene, manufactured by Rubatex Corporation, size as indicated, compressed 50 percent.
- E. Steel drill screws complying with ASTM C 1002 for fastening gypsum board to steel members less than 0.03 inch thick.
- F. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.
- G. Corrosion-resistant-coated steel drill screws of size and type recommended by board manufacturer for fastening cementitious backer units.
- H. Sound Attenuation Blankets: Unfaced mineral-fiber blanket insulation produced by combining mineral fibers of glass or slag with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing), 3 inch thick unless otherwise indicated.
- I. Resilient Ceiling Hangers: Model "AF" by Kinetics or Model "WHR" by Mason Industries, Inc.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected. Starting work within a particular area will be construed as applicator's acceptance of surface conditions.

3.02 PREPARATION

- A. Furnish concrete inserts and other devices to other trades for installation well in advance of time needed for coordination with other construction.

3.03 INSTALLING METAL FRAMING, GENERAL

- A. Metal Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, reinforcing, and bracing in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, hand rails, furnishings, or similar construction. Comply with details and recommendations of gypsum board manufacturer.
- C. Isolate metal framing from building structure to prevent transfer of loading imposed by structural movement.
 - a. Where building structure abuts ceiling perimeter or penetrates ceiling.
 - b. Where partition framing and wall furring abut structure except at floor.
 - c. Install slip, deflection or cushioned-type joints to attain lateral support and avoid axial loading.
- D. Do not bridge building expansion and control joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members.

3.04 INSTALLING METAL FRAMING FOR WALLS AND PARTITIONS

- A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum board stud assemblies abut other construction.
- B. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch in 10 feet in any direction from the plane formed by the faces of framing members.
- C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.
 - a. For STC-rated, smoke-rated and fire-resistive-rated partitions requiring partitions to extend to the underside of floor/roof slabs and decks or other continuous solid

structural surfaces to obtain ratings, install framing around structural and other members extending below floor/roof slabs and decks, as needed, to support gypsum board closures needed to make partitions continuous from floor to underside of solid structure.

- D. Space studs at 16 inches on center unless otherwise indicated. Install studs so that flanges point in the same direction. Lap studs a minimum of 8" where splicing is necessary and secure with screws.
- E. At partition intersections and corners, locate studs no more than 2" from partition intersections and corners and secure with screws through both flanges of studs and tracks.
- F. Install neoprene filler between metal studs and vertical aluminum mullions at exterior walls.
- G. For chase wall install framing as follows:
 - a. Position double row of metal studs vertically in runners, opposite each other in pairs with flanges pointing in the same direction.
 - b. Space studs 24" on centers unless otherwise indicated.
 - c. Attach with screws through each stud flange and runner flange.
 - d. Cross brace between rows of studs with 5/8" wallboard, 12" by chase width, or with metal studs.
 - e. Screw-attach to stud webs at 48" on center maximum in partition height with minimum of three screws per web.
- H. For furred wall install framing as follows:
 - a. Erect furring channels vertically, spaced 24" on centers.
 - b. Attach to surface with nails spaced 24" on centers, staggered on flanges.
 - c. Splice ends by nesting channels 8" and securely anchoring to surface.
 - d. Miter 24" long horizontal furring channels at corners and space 24" on centers vertically.
 - e. Locate furring channels around perimeter of openings and secure to surfaces.

3.05 APPLYING GYPSUM BOARD, GENERAL

- A. Gypsum Board Application Standards: Install gypsum panels to comply with ASTM C 840 and GA-216.
- B. Install sound attenuation blankets prior to installing gypsum panels unless blankets are readily installed after panels have been installed on one side.
- C. Install ceiling board panels across framing to minimize the number of abutting end joints and avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- D. Install wall/partition board panels vertically to minimize the number of abutting end joints or avoid them entirely. Stagger abutting end joints not less than one framing member in alternate courses of board. At stairwells and other high walls, install panels horizontally with end abutting joints over studs and staggered.
- E. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

- F. Locate both edge or end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Avoid joints other than control joints at corners of framed openings where possible.
- G. Attach gypsum panels to metal studs so that the leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- H. Attach gypsum panels to framing provided at openings and cutouts. Install gypsum panel over door heads and extend to one stud (16 inches) each side of door.
- I. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors, and doors over 32 inches wide. Apply spot grout at each jamb anchor clip and immediately insert gypsum panels into frames.
- J. Form control joints and expansion joints at locations indicated with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels.
- K. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (for example, above ceilings), except in chase walls that are braced internally.
 - a. Fit gypsum panels around ducts, pipes, and conduits.
 - b. Where partitions intersect open concrete coffers, concrete joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4-to-3/8-inch-wide joints to install sealant.
- L. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors. Provide 1/4-inch-to-1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- M. Seal construction at perimeters, behind control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant including a bead at both faces of the partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
- N. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.
 - a. Attach gypsum board to metal supports with self-drilling screws.
 - b. Drive screws to slightly dimple surface but not to break paper.
 - c. Space screws as recommended by GA-216 for non-fire rated partitions and ceilings.
 - d. Start field screwing near center and work towards edges.
 - e. Space screws not less than 3/8" from gypsum board edges.
 - f. Space screws for fire rated partitions as required by fire test.
 - g. Do not attach gypsum board to top runner where partition extends to structure unless required by fire test.
- O. For double layer application: Apply base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face layer joints offset at

least one stud or furring member with base layer joints. Stagger joints on opposite sides of partitions.

- P. Wall Tile Substrates: For substrates indicated to receive thin-set ceramic tile and similar rigid applied wall finishes, comply with the following:
- a. Install cementitious backer units at showers, tubs, and where indicated to comply with ANSI A108.11. and manufacturer's installation directions.
 - b. Install water-resistant gypsum backing board panels at walls to receive thin set tile and walls containing plumbing fixtures ("wet walls") and walls adjacent to plumbing fixtures.

3.04 PROTECTION

- A. Provide final protection and maintain conditions, in a manner suitable to Installer, that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion.

END OF SECTION

09 65 30 – RESILIENT BASE AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient wall base, accessories and supplementary items required for installation.

1.02 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements

1.03 SUBMITTALS

- A. Manufacturer's product data for each product specified.
- B. Samples for verification purposes in manufacturer's standard sizes, but not less than 12 inches long, of each different color and pattern of product specified.
- C. Certification: submit laboratory certification that each type of resilient flooring meets Surface Burning Characteristics requirements specified per ASTM E648/NFPA 253 and ASTM E 662/NFPA 258.

1.04 QUALITY ASSURANCE

- A. Single-Source Responsibility for Products: Obtain each type and color of product specified from single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of Work.
- B. Fire Performance Characteristics: Provide products with following fire performance characteristics as determined by testing products per ASTM test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Critical Radiant Flux: 0.45 watts per sq. cm or more per ASTM E 648.
 - b. Smoke Density: Less than 450 per ASTM E 662.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in dry spaces protected from weather with ambient temperatures maintained between 50 deg F (10 deg C) and 90 deg F (32 deg C).
- B. Move products into spaces where they will be installed at least 48 hours in advance of installation.

1.06 PROJECT CONDITIONS

- A. Maintain minimum temperature of 70 deg F (21 deg C) in spaces to receive products specified for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. After this period, maintain temperature of not less than 55 deg F (13 deg C).
- B. Do not install products until they are same temperature as space where they are to be installed.
- C. Close spaces to traffic during installation of products specified in this Section.

1.07 SEQUENCING AND SCHEDULING

- A. Sequence installing products specified in this Section with other construction to minimize possibility of damage and soiling during remainder of construction period.

1.08 EXTRA MATERIALS

- A. Deliver extra materials to Owner. Furnish extra materials matching products installed as described below.
 - a. Furnish not less than 10 linear feet for each 500 linear feet or fraction thereof of each different type, color and size of resilient wall base installed.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturer shall be as listed below.
- B. It is the Contractor's responsibility to assure all products meet or exceed requirements of Contract Documents. For manufacturers not listed, submit as substitution according to the "General & Supplementary General Conditions" of the Contract and Division 1 Section "Product Substitution Procedures".

2.02 RESILIENT WALL BASE

- A. Rubber Wall Base:
 - a. Comply with FS SS-W-40, Type I.
 - b. Thickness: 0.125 inch
 - c. Acceptable Manufacturers:
 - i. Johnsonite
 - ii. Mercer Products Co., Inc.
 - iii. Roppe Corp.
- B. Color to be selected by Owner from manufacturer's line to match base throughout exhibit area.

2.03 RESILIENT ACCESSORIES

- A. Carpet Accessories: Carpet Cove Cap, Carpet Step Off, Carpet Reducer, Carpet Edge Bar.
- B. Reducer Strip for Resilient Flooring and others as required.
- C. Accessories: Cap Strip, Cove Piece, Reducer.
- D. Material: Rubber
- E. Acceptable Manufacturers:

- a. Johnsonite
 - b. Mercer Products Co., Inc.
 - c. Roppe Corp.
- F. Color to be selected by Owner from manufacturer's line to match base throughout exhibit area.

2.04 INSTALLATION ACCESSORIES

- A. Concrete Slab Primer: Nonstaining type as recommended by product manufacturer.
- B. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement based formulation provided or approved by product manufacturer for applications indicated.
- C. Adhesives: Water-resistant type recommended by manufacturer to suit resilient product and substrate conditions indicated.
- D. Stair Tread Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates not conforming to tread contours.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas where installation of products specified in this Section will occur, with Installer present, to verify that substrates and conditions are satisfactory for installation and comply with manufacturer's requirements and those specified in this Section.

3.02 PREPARATION

- B. Comply with manufacturer's installation specifications to prepare substrates indicated to receive products indicated.
- C. Use trowelable leveling and patching compounds per manufacturer's directions to fill cracks, holes, and depressions in substrates.
- D. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, by using terrazzo or concrete grinder, drum sander, or polishing machine equipped with heavy-duty wire brush.
- E. Broom or vacuum clean substrates immediately before installing products specified in this Section. Following cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust.
- F. Apply concrete slab primer, if recommended by manufacturer, prior to applying adhesive. Apply according to manufacturer's directions.

3.03 INSTALLATION

- A. Install products specified in this Section using methods indicated according to manufacturer's installation directions.

- B. Apply resilient wall base to walls, columns, pilasters, casework, and other permanent fixtures to rooms and areas where base is required. Install wall base in lengths as long as practicable. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
 - a. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
 - b. Install inside and exterior corners before installing straight pieces.
 - c. Form inside corners on job from straight pieces of maximum lengths possible by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce snug fit to substrate.
 - d. Form outside corners on job from straight pieces of maximum lengths possible by shaving back of base at point where bending will occur. Remove a strip perpendicular to length of base and only deep enough to produce a snug fit without bends whitening or removal of more than half the thickness of wall base.
- C. Place resilient accessories so they are butted to adjacent materials of type indicated and bond to substrates with adhesive.
 - a. Install reducer strips at edges of flooring that otherwise would be exposed.
 - b. Install carpet accessories where carpet terminates.

3.04 CLEANING AND PROTECTION

- A. Perform following operations immediately after completing installation:
 - a. Remove visible adhesive and other surface blemishes using cleaner recommended by manufacturers.
 - b. Sweep or vacuum floor thoroughly.
 - c. Do not wash floor until after time period recommended by manufacturer.
 - d. Damp mop resilient accessories to remove black marks and soil.
- B. Protect products against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods indicated or recommended by manufacturer.

END OF SECTION

09 68 13 – TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile and supplementary items required for installation.

1.02 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements
- E. Section 09 68 13 – Resilient Base and Accessories

1.03 SUBMITTALS

- A. Manufacturer's product data for each product specified.
- B. Shop Drawings: Show dimensions of carpeted areas, locations of edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, cutouts edge strips, and other installation details. Show details of special patterns.
- C. Product Data: Catalog sheets, specifications, and installation instructions for the following:
 - 1. Tile Carpeting:
 - i. Trade name and number.
 - ii. Manufacturer.
 - iii. Address of mill constructing carpet.
 - iv. Construction type.
 - v. Gage.
 - vi. Stitches per inch.
 - vii. Pile height.
 - viii. Face yarn.
 - ix. Face yarn weight.
 - x. Weight density factor.
 - xi. Primary backing.
 - xii. Secondary backing.
 - xiii. Total weight.
 - xiv. Dye method.
 - xv. Tuft bind.
 - xvi. Static resistance.
 - xvii. Flammability.
 - 2. Edge strips.
 - 3. Adhesive.

D. Samples:

1. Tile Carpeting: Full size piece of each type, color, and pattern specified.
2. Edge Strip: 12 inches long, each type specified.
3. Color Samples: Manufacturer's standard color samples of each type and pattern specified.

E. Quality Control Submittals:

1. Product Certificates: Submit manufacturer's certified independent test results indicating that carpet meets or exceeds product performance specification criteria for carpet testing requirements listed under the Quality Assurance article below.

F. Contract Closeout Submittals:

1. Maintenance and Cleaning Instructions: Furnish 2 copies to the Director's Representative.
2. Warranty: Copy of specified warranty.

1.04 QUALITY ASSURANCE

A. Flammability Certification:

- a. Radiant Panel Flooring Flammability Test: NFPA 253. Class I, Minimum 0.45 watts per sq centimeter.
- b. Methenamine Tablet Test: DOC-FF-1-70 and ASTM D 2859. Meet the "Standards for the Surface Flammability of Carpets".
- c. Smoke Density Test: NFPA 258 and ASTM E 662. Specific optical density (DM) of 450 or less (flaming).

B. Colorfastness to Light: AATCC 16, Option E. Minimum rating of 4 on grey scale after 80 hours exposure.

C. Colorfastness to Crocking: AATCC 165. Minimum rating of 4 wet and dry.

D. Appearance Retention Rating: ASTM D 5252. CRI TM-101 "Severe" rating.

E. Stain Resistance: AATCC 175. Rating of 8 or better.

F. Static Resistance: AATCC 134. 3.5 kv or less, at 70 degrees F and 20 percent RH.

G. Tuft Bind: ASTM D 1335. Average pounds of force not less than 12 pounds.

H. Dimensional Stability: Aachen Method DIN 54318, 0.2 percent or less.

I. Installer Qualifications: The persons installing the tile carpeting and their Supervisor shall be experienced in carpeting installation, including the requirements of the tile carpeting manufacturer, and shall have been regularly employed by a company engaged in installation of carpeting for a minimum of 5 years.

J. Certifications: Furnish certification from tile carpeting installer that the substrate surfaces have been examined and are acceptable for installation of the Work of this Section.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver tile carpeting in original carpet mill packaging with each package having labels legible and intact.

- B. Store tile carpeting and related materials in an enclosed and dry area protected from damage and soiling.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Continuously condition spaces to receive tile carpeting to a temperature of 72 degrees F for at least 48 hours prior to tile carpeting installation, during the installation, and for 72 hours after installation.
- B. Do not install the Work of this Section over concrete substrate until concrete has cured 30 days minimum.

1.07 SEQUENCING AND SCHEDULING

- A. Do not install the Work of this Section until painting, finishing Work, and Work of other trades has been completed.

1.08 WARRANTY

- A. Manufacturer's Warranty: Minimum 15 year wear warranty.

1.09 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - a. Tile Carpeting: Full size units equal to 5 percent of amount installed, but not less than 10 square yards for each color, pattern and type of tile carpeting installed.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturer shall be as listed below.
- B. It is the Contractor's responsibility to assure all products meet or exceed requirements of Contract Documents. For manufacturers not listed, submit as substitution according to the "General & Supplementary General Conditions" of the Contract and Division 1 Section "Product Substitution Procedures".

2.02 MATERIALS

- A. Interface Menagerie II, Charcoal
- B. Size: 24 x 24 inches
- C. Acceptable Manufacturers:
 - a. InterfacFLOR, LaGrange, GA30240, (800) 336-0225, www.interfaceflor.com
- D. Resilient Edge Strips: Not less than one inch wide, tapered bullnose edge, thickness and color as selected.

- E. Metal Edge Strips: Extruded aluminum, mill finish; butt type for concealed anchorage; countersunk stainless steel fasteners, with anchors suitable for substrate surface.
- F. Trowelable Leveling and Patching Compounds: Latex-modified Portland cement based or blended hydraulic-cement-based formulation provided or approved by tile carpeting manufacturer for application on substrate surface and grade level.
- G. Adhesives: Tile carpeting manufacturer's recommended water resistant materials formulated for application on substrate surface and grade level.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces scheduled to receive tile carpeting for defects that will adversely affect the proper installation. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Clean floors of dust, dirt, solvents, oil, grease, loose paint, and other substances. Allow floors to dry thoroughly.
- B. Concrete Floors: Level uneven surfaces and patch cracks and small holes with patching compound.

3.03 INSTALLATION

- A. Install tile carpeting in accordance with CRI 104, Section 14 and with tile carpeting manufacturer's written installation instructions.
- B. Maintain dye lot integrity. Do not mix dye lots in the same area.
- C. Cut and fit tile carpeting neatly around projections through floor and to walls and other vertical surfaces. Bind or seal cut edges as recommended by the tile carpeting manufacturer.
- D. Install edge strips where tile carpeting terminates at other floor coverings or finishes. Use one full length piece where possible. Where splicing cannot be avoided, butt ends tight and flush.

3.04 CLEANING AND PROTECTION

- A. Upon completion of the tile carpeting installation, immediately remove spots and smears of excessive adhesive from tile carpeting with cleaning solvent. Remove loose pieces of face yard with sharp scissors.
- B. Place usable remnants of tile carpeting in an area designated by the Owner's Representative.
- C. Remove waste materials and tools.
- D. Upon completion, thoroughly vacuum clean carpeted areas.
- E. After each area of tile carpeting has been installed, protect from soiling and damage.
- F. Allow glue-down installation a minimum of 48 hours to cure before subjecting it to any traffic, moving of furniture, or other heavy equipment.

END OF SECTION

09 91 00 – PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation and field application of paints new and existing wall surfaces
- B. Surface preparation and field application of paint on limited area of concrete slab.

1.02 RELATED SECTIONS

- A. Section 00 10 10 – Substitution Form
- B. Section 01 30 00 – Administrative Requirements
- C. Section 01 35 10 – Environmental Safety and Worker Protection
- D. Section 01 60 50 – Product Requirements

1.03 REFERENCES

- A. ASTM D 16 – Standard Terminology for Paint, Related Coatings, Materials, and Applications, 2000.

1.04 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16.
 - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85 degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60 degree meter.
 - 3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60 degree meter.
 - 4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60 degree meter.

1.05 SUBMITTALS

- A. See Section 01300 – Administrative Requirements, for submittal procedures.
- B. Materials List: An inclusive list of required coating and patching materials. Indicate each material and cross reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
- C. Product Data: Provide manufacturers' technical information, label analysis, storage requirements, and handling, preparation, and application instructions and recommendations for each paint product used.
- D. Product Data: Provide manufacturers' technical information, label analysis, storage requirements, and handling, preparation, and application instructions and recommendations for the plaster patching product used.

- E. Provide two samples of each color and material to be applied, representing actual product, color, and texture, on 6"x6" heavy cardstock. Label each sample as to location and application.
- F. Field Mockups: Provide a sample of the complete paint system for both galvanized sheet metal and plaster surfaces, for each finish color and material to be applied, on representative samples of the actual substrate which has been cleaned and prepared per these specifications for work.

1.06 QUALITY ASSURANCE

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers from manufacturer.
- B. Store paint products in protected, ventilated area within temperature ranges required by the manufacturer.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Comply with governing authorities for removal and disposal of surplus paint products.
- B. Apply paints within manufacturers' recommended temperature and humidity ranges for application.
- C. Comply with health and safety regulations for work around potential disturbance of lead paint.

1.09 EXTRA MATERIALS

- A. See Section 01 60 00 – Product Requirements for additional provisions.
- B. Deliver to Owner not less than one gallon of each finish paint in each color required for Project; mark each container with color and locations where paint was used, without obscuring manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
 - a. Wall Paint:
 - i. Benjamin Moore
 - b. Metal door paint:
 - i. Benjamin Moore
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00, and will require fully cured samples in place for review.

2.02 PRODUCT SCHEDULE

- A. Acceptable Products:
 - 1. Walls: Benjamin Moore Regal Select, pearl finish, or equal, with appropriate primer where required on previously unpainted surfaces

2. Metal doors and frames: Benjamin Moore Regal Select, pearl finish, or equal, with appropriate metal primer were required
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00, and will require fully cured samples in place for review in addition to justification requirements.

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Clean ledges and tops of protruding elements of all dust in all accessible areas.
- C. Clean stained areas; if stains do not remove, prepare area as sound and tight paint, and paint over stain.
- D. Clean and prepare all surfaces to be painted in accordance with the manufacturers' instructions for each particular substrate condition, and as specified.
- E. For painting on concrete surfaces, prepare surface with vacuum assisted diamond grinding with a HEPA filter vacuum system.
- F. Fill any cracks or holes with compatible filler.
- G. Provide barrier coats over incompatible primers or remove and reprime. Notify Owner/Architect in writing of problems anticipated with using the specified coatings with substrates primed by others.

3.02 APPLICATION

- A. Apply paint products according to manufacturers' instructions.
- B. Apply paint products within condition limitations defined by the manufacturer.
- C. Use applicators and techniques best suited for substrate and type of material being applied.
- D. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
- E. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
- F. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
- G. Use only the type of thinners approved by manufacturer and only within recommended limits.
- H. Ensure planned ventilation measures are in effect before beginning application.
- I. Apply all primer and paint with uniform thickness and finish.

- J. Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- K. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- L. Apply subsequent coats only after preceding applications have cured to the level recommended by manufacturer.
- M. Sand between applications as required or recommended by manufacturer.
- N. Apply primer coat to all previously unpainted surfaces and at all repairs and patches.
- O. Finish coat application at walls:
 - a. Apply two finish coats to walls.
 - b. Allow paint to dry, and lightly sand between coats as required by manufacturer.
 - c. Hand paint cut lines where colors change on a contiguous surface, maintaining a clean line.

3.03 CLEANING AND PROTECTION

- A. Keep project premises free of painting-related debris. Collect material that may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Protect work adjacent to painting operations from paint splatters and spills. Immediately remove paint that falls on finished surfaces not scheduled to receive paint, using materials and techniques that will not damage affected surfaces.
- C. Adjacent areas and surfaces shall be protected with sheets of polyethylene or other proven protective material. Surfaces to be protected should be completely covered with the polyethylene and chemical resistant masking tape used to seal off the edges of the polyfilm.
- D. Protect all existing and new final finishes from paint drips and damage, within area of work.
- E. Protect adjacent wood surfaces, and any non-removable fixtures, escutcheons or plates, with a means that will not damage existing finishes upon removal.

END OF SECTION

10 26 13 – ALUMINUM CORNER GUARD

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aluminum corner guards for all outside gypsum board corners.

1.02 RELATED SECTIONS

- A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 40 00 –Quality Requirements
- C. Section 01 60 00 – Product Requirements
- D. Section 01 70 00 – Execution Requirements
- E. Section 05 40 00 – Cold Formed Metal Framing
- F. Section 09 26 50 – Finishing of Gypsum Board

1.03 SUBMITTALS

- A. Product Data
 - 1. Data sheet illustrating product dimensions, options, and related components.
 - 2. Installation instructions.
- B. Samples for verification of design suitability and finish.
 - 1. 12" (304) Long sample.
- C. Test reports from a qualified independent laboratory showing results in compliance to requirements indicated

1.04 QUALITY ASSURANCE

- A. Manufacturer to have no less than 5 years experience in the production of wall protection products having successful in-service performance.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Storage: Store wall protection products in original packaging. Protect from weather, extreme temperatures, and moisture.
 - a. Maintain temperature during storage between 40°- 100°F (4°- 38°C).
 - b. Store materials flat to prevent twisting or sagging of cartons.
- B. Handling: Take adequate measure to prevent damage to materials.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturer shall be as listed below.
 - a. Wallguard.com
PO Box 1109

Dover Plains, NY 12522
sales@wallguard.com Wallguard.com 877-943-6826/ www.wallguard.com

2.02 DESCRIPTION

- A. Model 2340, 1" (25) x 1" (25) x 90° Surface mounted aluminum corner guard with 1/8" (3) radius corner. Construction adhesive included for standard installation. Available pre-drilled or pre-drilled and countersunk for use with mechanical fasteners. Angles other than 90° and wings other than 1" (25) are available.

2.03 MATERIALS

- A. Aluminum: Alloy 5052-H32, .080 (2) thick, mill finish.
- B. Adhesive: Model ADH-50 low VOC polyurethane based construction adhesive.

2.04 FABRICATION

- A. Corner guards shall be factory formed from aluminum sheet.
 - a. Edge burrs shall be removed.
 - b. Single piece fabrication to 144" (3658) in length.

2.05 ACCESSORIES

- A. Mechanical Fasteners:
 - a. For Optional Pre-drilled Holes: Stainless steel #6 x 1 1/2" Philips oval head sheet metal screw with stainless steel cup washer.
 - b. For Optional Pre-drilled and Countersunk Holes: Stainless steel #6 x 1 1/2" Philips oval head sheet metal screw.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine walls for availability of backing to ensure secure attachment of wall protection products.
- B. Verify that HVAC is operating and installation area temperature has been maintained between 65°-75°F (18°-24°C) for at least 72 hours prior to installation.
- C. Verify application of wall finishes has been completed in accordance with project finish plan.

3.02 PREPARATION

- A. Surface Preparation: Clean substrate to remove dust and debris.

3.03 INSTALLATION

- A. Acclimate materials to building conditions for at least 24 hours prior to installation.
- B. Install wall protection products in accordance with manufacturer's installation instructions.

3.04 PROTECTION

- A. Protect installed material from damage by other trades. Use materials that will not mark, stain, or leave residue on the product.

END OF SECTION

